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KIMBALL
← STRAIGHT—LINE—DRIVE →
ELEVATORS



KIMBALL BROS. CO.
COUNCIL BLUFFS, IOWA.

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CCA



KIMBALL BROTHERS COMPANY



PASSENGER & FREIGHT

NINTH STREET & ELEVENTH AVE

ELEVATORS

COUNCIL BLUFFS, IOWA.

To
Our Old Friends
Our New Friends
Our Prospective Friends:-

In sending you this latest edition of our general catalogue, we are doing so with the hope that it will benefit you. If it assists you, or helps you in the solution of your elevator problems we shall feel fully repaid.

With this booklet, we are sending you greetings on our fortieth anniversary. With the passing of this year, we leave forty years of experience, experimentation and advancement behind, on which we can draw for your service.

The writer little dreamed that in starting a small business with his brother forty years ago that it was destined to become a large corporation and take its place in the world as a real helpful service to our thousands of customers.

The second generation is coming on and gradually taking over the active operation of the factory in every department. They are a fine lot of picked young fellows, very anxious to assist you in your particular problem. They work the hardest when a tough job is presented, and they are also pleased the most to see its successful completion.

If, after your study of this booklet, you fail to find what you want, don't hesitate to write me. Perhaps I can help you with my personal experience--In any event, I would be more than pleased to make your acquaintance, so drop me a line and tell me about yourself. We are all old fashioned folks here, anxious to help anyone we can.

I take this opportunity of thanking our old friends and customers for the patronage extended, and also again pledge ourselves to the task of greater service to all our friends, both old and prospective.

Sincerely yours,

Kimball Bros. Co.,

By W. H. Kimball Secy.

WHK-EB

An Elevator for Every Requirement



KIMBALL
Passenger Type
ELEVATORS

Kimball Elevators



K TYPE
Automobile Elevator
Capacities 5000 to 8000 lbs
Direct Connected
Extra Heavy Construction

Manufactured by
Kimball Bros. Co.
Council Bluffs, Iowa

Kimball Elevators

Number 2 Hand Power Elevator
Over 6000 in use in this country



Simplest most practical and easiest to operate
Has no gear or clumsy drums and runs with little friction

Manufactured by **KIMBALL BROS. CO.**
COUNCIL BLUFFS, IOWA

Extra Heavy Elevator Machines

Kimball Elevators Are Used in Canada, in Mexico, and in Every State in the Union



Type "M" Heavy Tandem Machine

KIMBALL BROS. CO.
COUNCIL BLUFFS, IOWA

KIMBALL
Electric Attachment
for Hand Power Elevators



Convert Your Hand Elevator To a Direct Connected Electric



Save Time, Energy and Money Speed up Sales

SIMPLE, Direct Connected, Easy to Install. Capacity range from 500 to 4000 pounds. Suitable for any Hand Power Elevator of all Makes and Capacities.

The Machine that will Pull you out of the Rut

Manufactured by
KIMBALL BROS. CO.
COUNCIL BLUFFS, IOWA

Builders of Hand Power and Freight and Passenger **Electric Elevators**

KIMBALL
LIGHT ELECTRIC ELEVATOR

Direct Connected Self Container
Straight Line Drive



MANUFACTURED BY
KIMBALL BROS. CO.
COUNCIL BLUFFS, IOWA

Established 1883

Kansas City
Detroit
South Bend
St. Louis
Clinton
Des Moines
New Orleans

Duluth
Minneapolis
Denver
Salt Lake
Dallas
Oklahoma City
Fort Smith

Send for These Pamphlets. They Contain Valuable Information for You. Sent Free on Request.



Kimball Products

Hand Elevators

Electric Elevators

Garage Elevators

Sidewalk Elevators

Passenger Elevators

Freight Elevators

Push Button Elevators

Ash Hoist Elevators

Dumb Waiters

Home Office and Factory

Ninth Street and Eleventh Avenue
Council Bluffs, Iowa

Branches

610 Delaware Street
Kansas City, Mo.

253 Plymouth Building
Minneapolis

57 Orpheum Avenue
Salt Lake City

629 West Main Street
Oklahoma City, Okla.

712 North 10th Street
St. Louis, Mo.

901 Charlevoix Building
Detroit, Mich.

316 Columbia Building
Duluth

402 Muskogee Nat'l Bank
Muskogee, Okla.

523 Boston Building
Denver, Colo.

337 Insurance Exchange Bldg.
Des Moines

Sullinger Builders' Supply Co.
Fort Smith, Ark.

Garver Sales Company
Auburn, Ind.

F. T. Crowe
Seattle, Wash.

Electric Elevator & Service Co.
Dallas, Tex.

Officers

C. E. KIMBALL
President

D. B. STAUFER
Vice-President and Manager

W. H. KIMBALL
Secretary and Treasurer

Introduction



HE business conducted by Kimball Bros. Co., an independent corporation, was established in 1883 and Incorporated in 1901. The Directors of the Company hold active office in the administration of the business.

The patents under which Kimball Elevators are built were developed by our own engineers and cover the essential features of their construction. Many of these features are exclusive, and have an important bearing upon the machine efficiency and are not found on competitive equipment. We especially mention **STRAIGHT LINE DRIVE**, or Unit Construction. This design is a distinct advance in general practice.

Authorized agents and service stations represent us in most of the important cities of the middle west and west. These representatives are equipped with valuable information and data and we suggest your communicating with them.

We will be pleased to give you the name of our agent in your vicinity, upon application.

The cuts shown in this catalogue are not necessarily binding in detail, as we reserve the right to make improvements in our line and incorporate them as conditions permit.

In all cases, Kimball Elevators are built with full knowledge of the fact that you will expect unusual service from them.

CONSTRUCTION:

All castings, brass, aluminum and iron, for Kimball elevators are made in our own foundry under the supervision of our own Metallurgist and especially suited to the particular work for which they are required.

All parts are machined to jigs and to standard gauges and templates by workmen who through repetition and long experience with us have become very proficient in the particular part they produce, insuring detailed accuracy and interchangeability.

Detailed inspection is given each machine before shipment, and complete record made and filed, for your protection.

We are constantly adding new production equipment, such as new machines as are developed and designing many not on the market best suited to our own particular industry.

These methods have enabled us to maintain the quality standards of Kimball Elevators for most half a century.

The descriptions we can give in this book, necessarily, are limited, but we shall be glad to go further into the subject with any interested party.

Policy—With forty years of elevator experience under the same management backing each Kimball Elevator, we are in a position to build, install and guarantee Electric Elevators embodying all the latest safety improvements. Built mechanically correct with but a single aim—To give the utmost service and safety at minimum upkeep expense.

Correctly designed machines, ruggedly assembled and installed by the best mechanics has always marked our forty years of progress.

When buying Kimball Elevators you purchase not only the best of workmanship and materials, but a product from a Nationally known concern, backed by years of successful experience.

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Points to Consider in the Selection of Elevators Specifications



AN ELEVATOR manufacturer, naturally, prefers to see the special features of his elevator covered by the specifications which the architect sends out to elevator manufacturers for competitive bids.

Taking the owners viewpoint, this is not good practice. In the first place, it eliminates competition, as only one elevator builder, the one whose special features were covered, can bid strictly according to the specifications.

The other elevator builders will either not bid, or be placed at a great disadvantage.

In our opinion, it would be fairer to the owner for the architect to specify the load, size of platform, speed desired within certain limits, whether passenger or freight service, type of control, voltage and other points in a general way making reference, if desired, to weight, size of gear, motor, horsepower of machine, or other specific details.

With such a specification manufacturers could engineer the job according to their best judgment and draw up specifications for the job to be submitted to the architect, or owner, with their bid. The architect and owner would then have the opportunity to compare the different bids, not only in price, but design, general construction, etc.

The purchaser may find it to his advantage to purchase from one builder even at a premium because of some special feature, or other details.

When bids have been received the architect and owner should go over each one to see that their general specifications have been fulfilled and then make a comparison which will bring about the purchase after considering everything.

There are several details to be considered in making this comparison and each should be carefully considered. We enumerate some of the more important ones and explain why they should be considered.

1st. The Motor. In comparing motors it is best to do so on a torque basis. The torque necessary to lift a certain net load at a certain speed can be determined from the following formula:

$.8 \times \text{net load in pounds} \times \text{car speed (ft. per min.)} \div \text{full load speed of motor.}$

Judging motors by horse power is misleading because all makes of motors of the same horse power do not have the same torque. For example, one make of 10 H. P. motors may have 120 lbs. torque, another 145 lbs. and others somewhere in between, and all rated at the same speed.

2nd. Counterweights. The capacity of a motor is sometimes boosted by means of over counterweighting. This is bad practice because of the extra load on the machine bearings requires more power consumption on the down travel with light load or no load and has a tendency to make the starts and stops jerky. The counterweights should, in no case, exceed the weight of the car plus 40% of the capacity. It is better to keep it to 35%, if possible.

3rd. Controller. By examining cuts of the different controllers the purchaser can determine the accessibility of the wearing parts. This is quite an important feature for the contacts will wear out and the easier it is to renew them the better it is. The contacts should also be liberal in size, to insure longer life. The different switches should operate with as little noise as possible and the whole board should be simple in design and with as few parts as possible. In connection with the controller there should be such safety appliances as the judgment of the purchaser deems necessary for his job, such as hatch limit switches, governor switch, phase reversal and phase failure relay, sequence relay, emergency switch on car, door or gate switches, etc. If the purchaser is in doubt as to the advisability of using some of these features he should feel at liberty to consult with the elevator builder.

4th. Machine. The winding machine, or engine, as it is sometimes referred to, is one of the most important things to consider. The worm and gear form the heart of the machine and should be given first consideration. The points to take up are as follows: Material of which each is made; the principle dimensions of each; how each is made; how the gear is fastened to the web and the ratio of the gear diameter to that of the traction sheave. The worm thrust bearing is an important part and its accessibility and wearing facilities are well worth giving careful thought.

The brake must be depended upon to bring the car to a gradual stop and hold it at any point in the hatchway. It should release instantly when the car is started and should operate on a minimum amount of power. To accomplish all these things the pulley must be proportioned correctly in regard to diameter and face. The shoes should have a large bearing contact so that the pressure does

not have to be so severe. This will eliminate unnecessary wear on the lining and take less power to release it.

The connection between the gear and the traction sheave should be so designed that it will not cause any trouble during the life of the elevator.

The points to consider when comparing the traction sheaves are material, diameter, design of grooves and their effect upon the life of the cable.

The bed plate is a minor item as far as the satisfactory working of the elevator is concerned. It simply forms a base on which to assemble the other parts of the machine and should be plain and so designed as to catch all waste, grease and oil from the machine.

Taking the machine as a whole, it is well to observe whether the different parts are assembled in such a way that all parts will be in line and remain that way indefinitely. This is especially true in regard to the connection between the worm and motor. If these two parts get out of alignment the machine will vibrate excessively and the services of a skilled mechanic are required to correct the trouble.

5th. Car. The car or travelling part of the elevator may be divided in four parts, namely:—Sling or bail, platform, enclosure or cab, (depending on whether it is a freight or passenger job) and safety catch. The bail should be assembled of structural steel shapes braced and reinforced where necessary in order to eliminate all possibility of racking on account of eccentric loading. The platform serves as the loading space and should be securely attached to the bail and braced so that it will remain level no matter whether the load is concentrated or placed on it uniformly. The bail and platform will, naturally, be of heavier construction as the size of the platform and capacity of the job increases.

The type of enclosure on a freight elevator depends on the service required of the elevator. Sometimes a light wood wainscoting is sufficient, while on other jobs a heavy, well reinforced steel wainscoting will be required. Most ordinances state that this should be at least 6'0" high and in addition, that a diamond wire mesh covering shall be placed over the platform and have hinged section over the loading edges.

6th. Cab. On passenger elevator the selection of the ordinary cab should receive considerable attention as it is what the passengers who use the elevator judge it by. The points to consider are, construction, design and finish, all of which are largely a matter of taste.

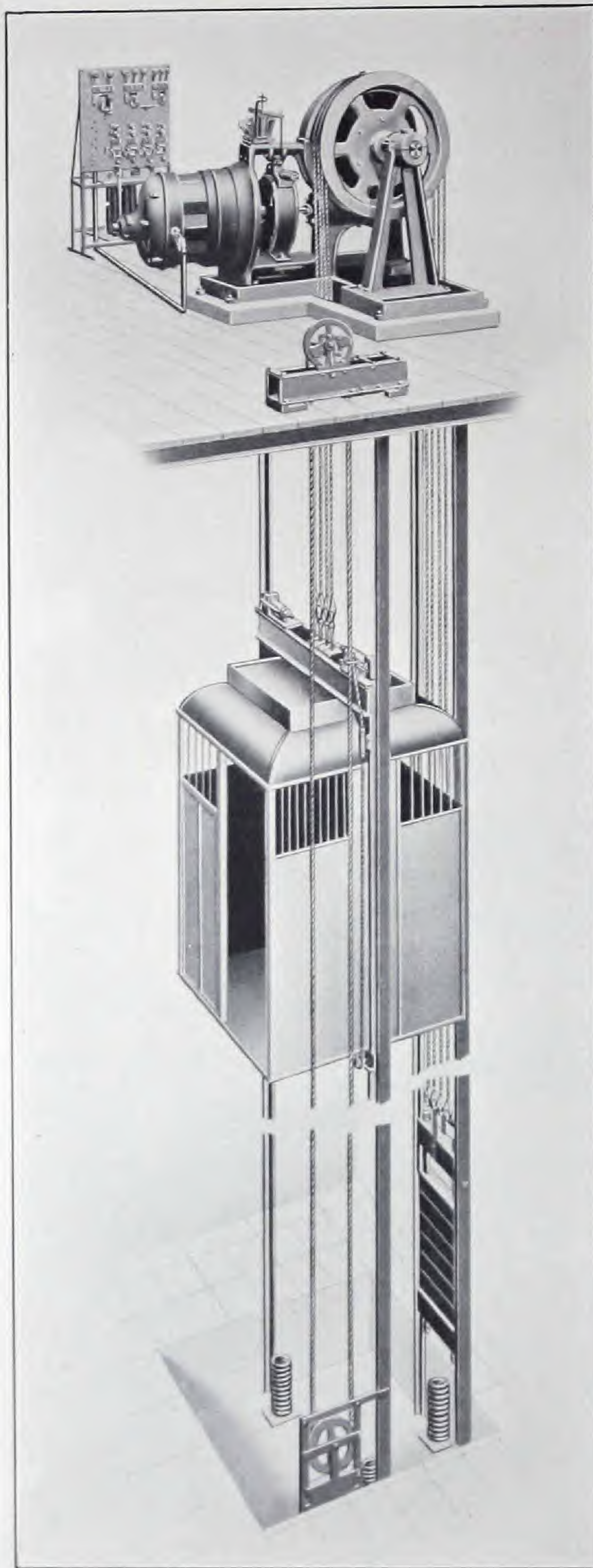
7th. The safety catch above all other things, should be correctly designed. It will, ordinarily, receive little or no attention after installation. It is necessary, therefore, to have one that has been thoroughly tested and can not possibly get out of order. The majority of the ordinances require a drop test at the time of installation and at intervals of once or twice a year after this. The prospective purchaser of an elevator must satisfy himself that the safety catch he is getting can be depended upon to perform its functions at any time, regardless of whether or not it has been given the proper attention.

The selection of the governor should receive the same careful consideration that the safety catch does. A perfect governor must operate whenever the car attains excessive speed downward or when the cables break. If it will operate the safety catch when the cables break without the car having to attain the governor tripping speed, so much the better. A switch which operates in conjunction with the governor to stop the motor and apply the brake is an added advantage.

The specifications as furnished by the different elevator companies will not vary a great deal in regard to rails and cables. The rails are all about the same shape and machined in much the same way. The only difference there might be is in the weight per foot of the rail, which should be specified. The job should be cabled for a certain factor of safety as called for by the ordinances or insurance companies, but it is sometimes well to have a factor of safety above the minimum requirements of the ordinances.

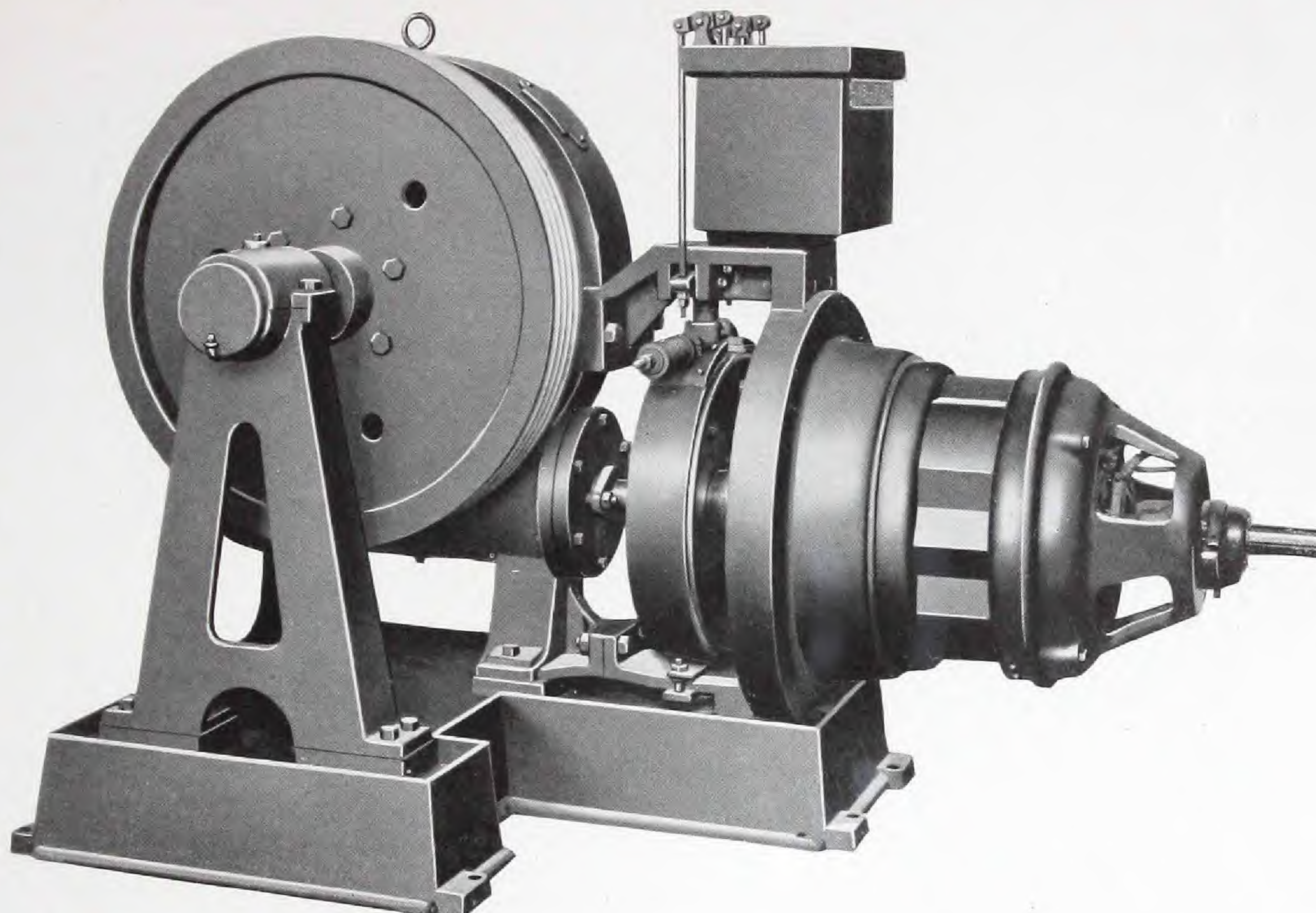
There are other parts of an elevator such as gates on freights, annunciators, indicators, lights, etc. which are almost standard articles and which are furnished or not, as the job requires. Doors for passenger elevators are so frequently furnished by other than the elevator contractors, that they need not be considered here.

In summing up our views on specifications, we believe that more satisfactory results can be obtained if the specifications as sent out to the elevator manufacturers are general, demanding only that certain standards relative to dimensions, weights, proportions, etc. be observed. In this way each builder can bid on his own specifications covering the details which will result in the purchaser getting a variety of details to choose from, with more satisfactory results.



A typical overhead passenger installation, showing arrangement of machine, controller cables, governor, etc.

Heavy Power Machine

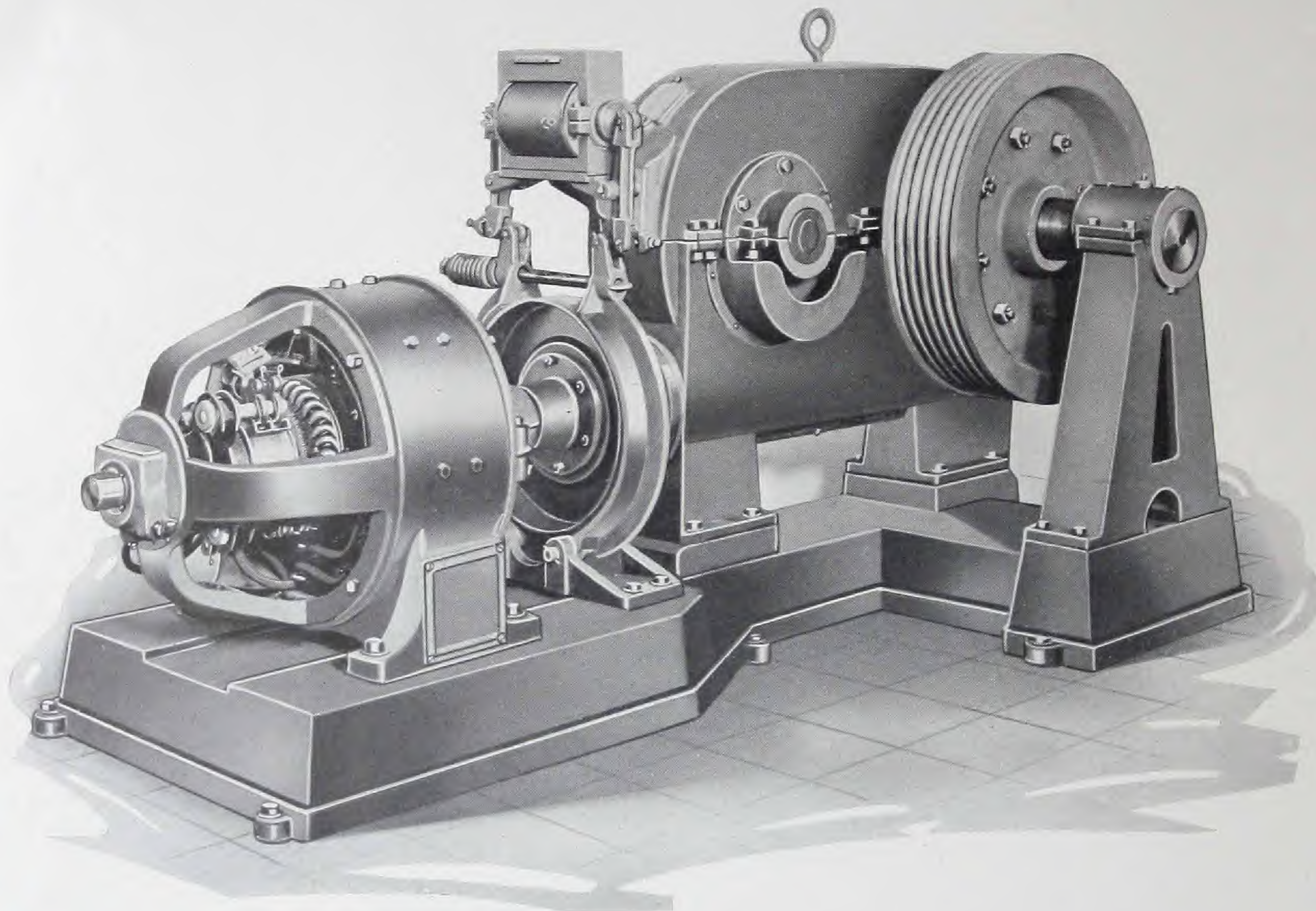


Forty Horsepower Machine

Heavy single screw traction machine. Built for all types of control.

Complete with submerged electro magnet brake, sleeve drive construction, ball thrusts and mounted on single piece bed plate.

Extra Heavy Duty Tandem Electric Machine



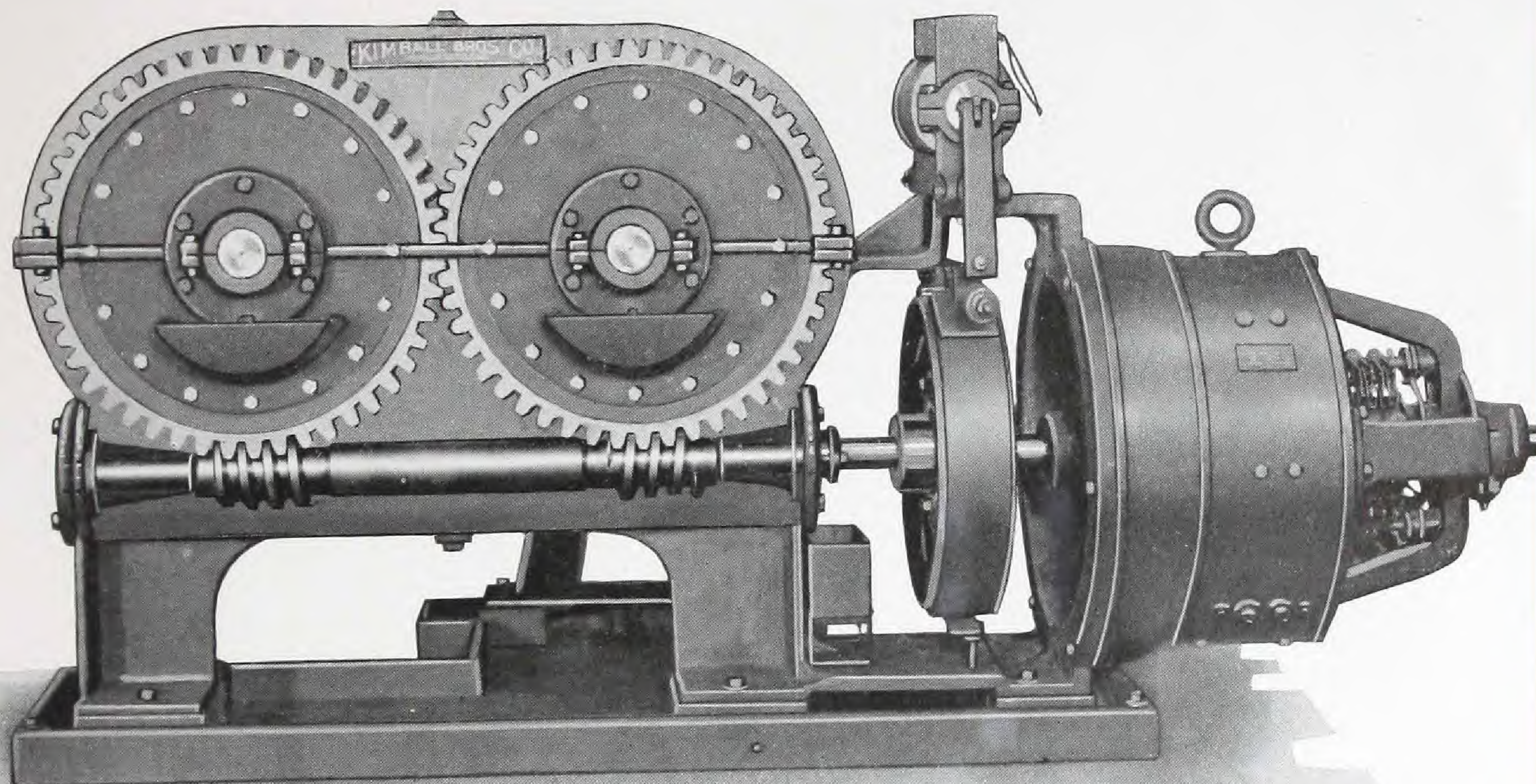
Sixty Horsepower Machine

Extra heavy duty tandem traction machine with double right- and left-hand worms and gears. Three point gear contact, eliminating all thrust pressure.

Suitable for capacities up to 50,000 pounds.

Extra Heavy Duty Tandem Electric Machine

(Section)



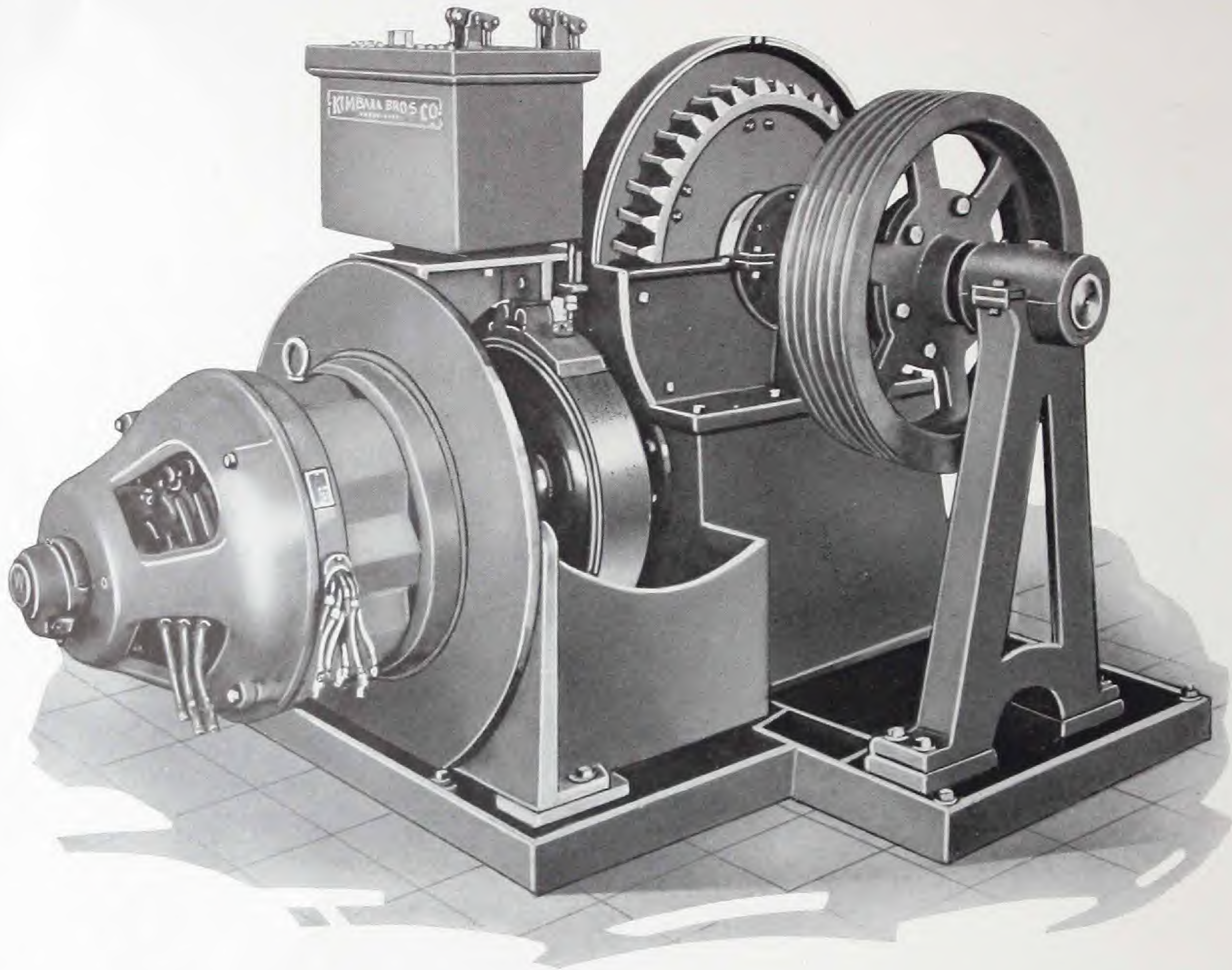
Sixty Horsepower Machine

Section through gear case showing right- and left-hand worms and gears and "three point contact." This machine eliminates the use of thrust bearings.

Cut shows Electro Magnet Brake, Sleeve Drive Construction, and Single Piece Bed Plate.

Heavy Electric Single Screw Machine

Straight Line Drive



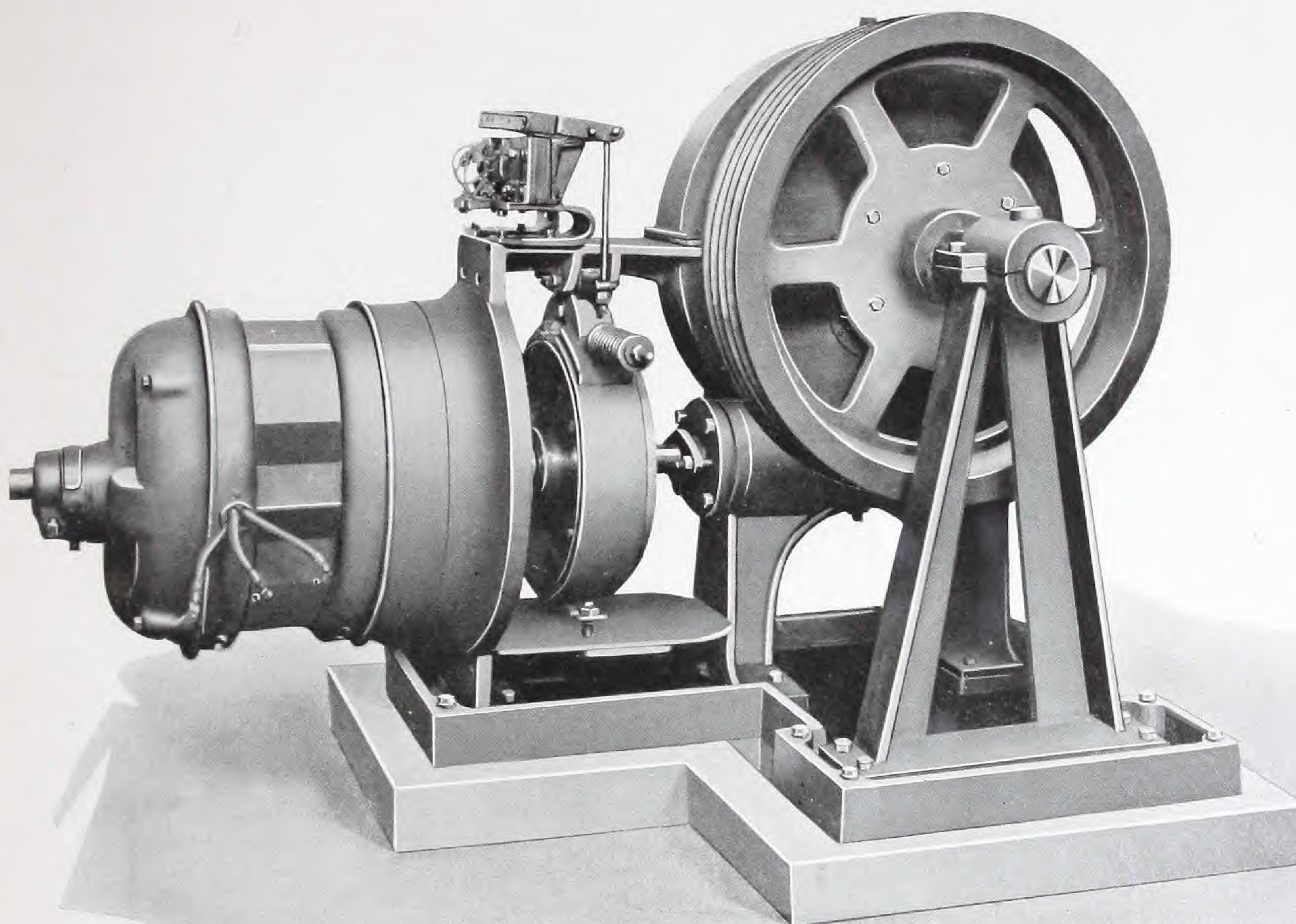
Forty Horsepower Machine

Direct connected or straight line drive, overhead traction machine, with electric brake, sleeve drive construction and solid cast bed plate.

Passenger and Freight Service

Medium Electric Single Screw Machine

Straight Line Drive



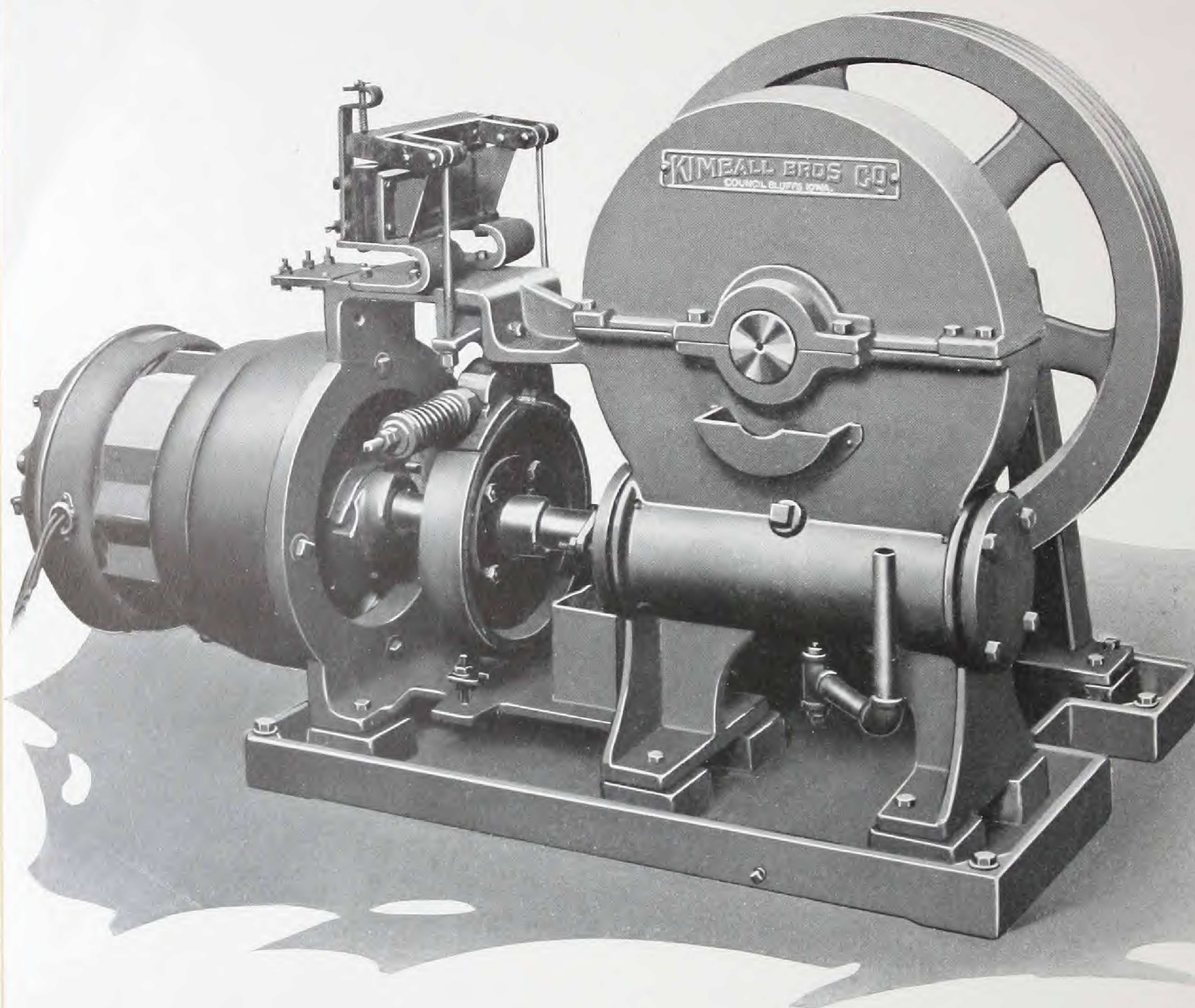
Twenty Horsepower Machine

Direct connected straight line drive, overhead traction type machine.

Passenger and Freight Service

Light Power Single Screw Machine

Straight Line Drive



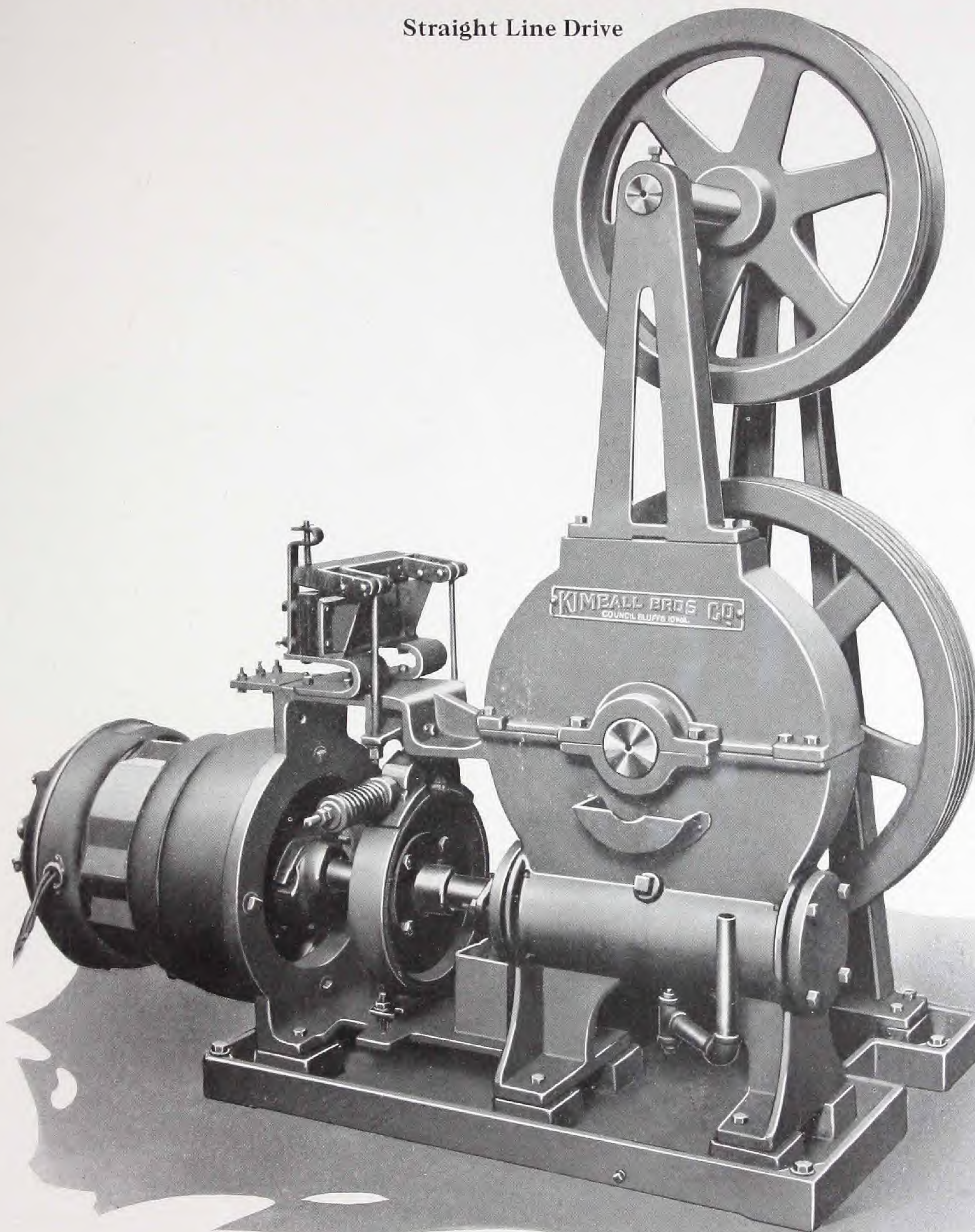
Ten Horsepower Machine

Direct connected overhead traction machine, completely equipped.

Passenger and Freight Service

Light Power Single Screw Machine

Straight Line Drive



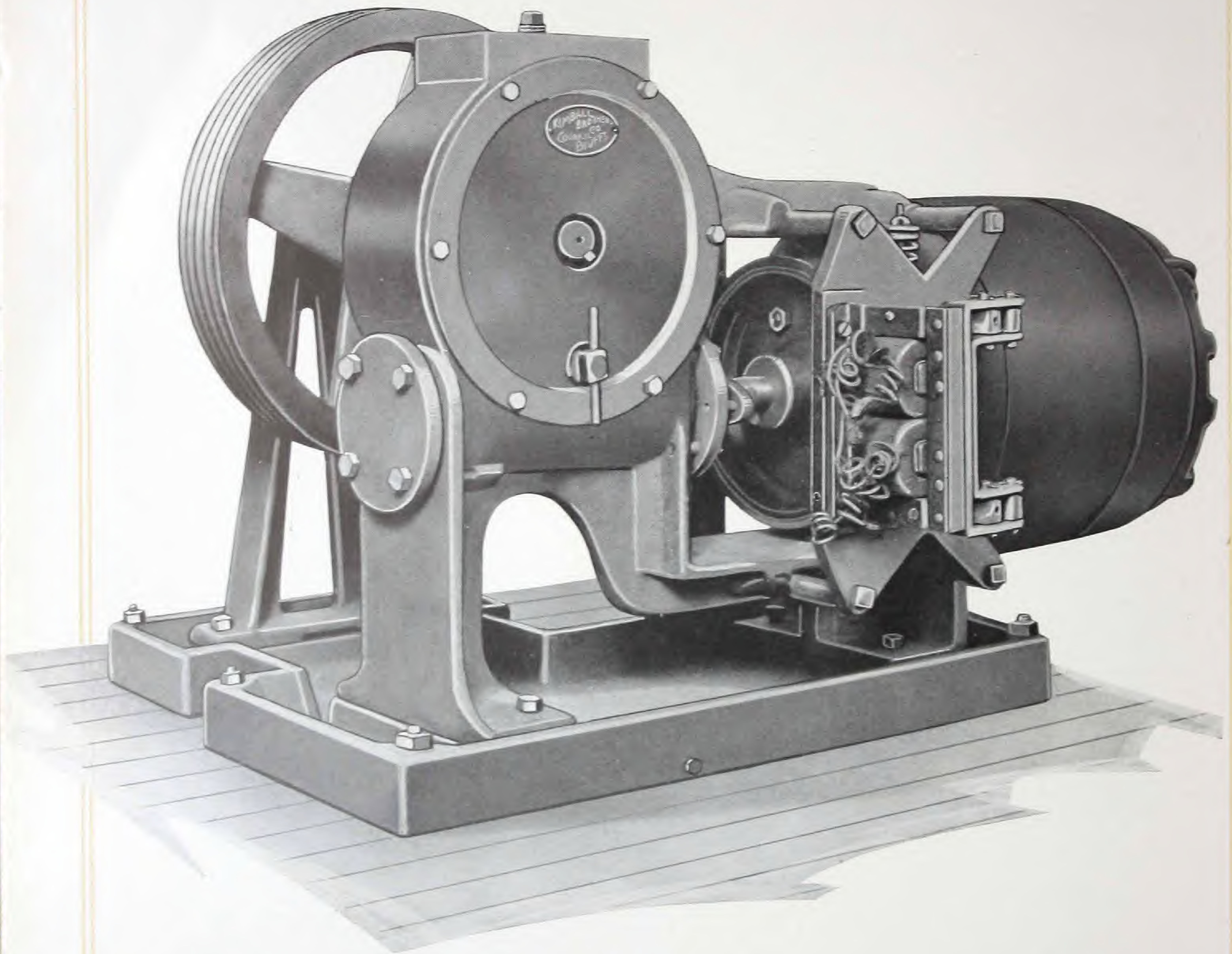
Ten Horsepower Machine

Direct connected straight line drive, basement traction machine, completely equipped.

Passenger and Freight Service

Dumb Waiter or Light Elevator Single Screw Machine

Straight Line Drive



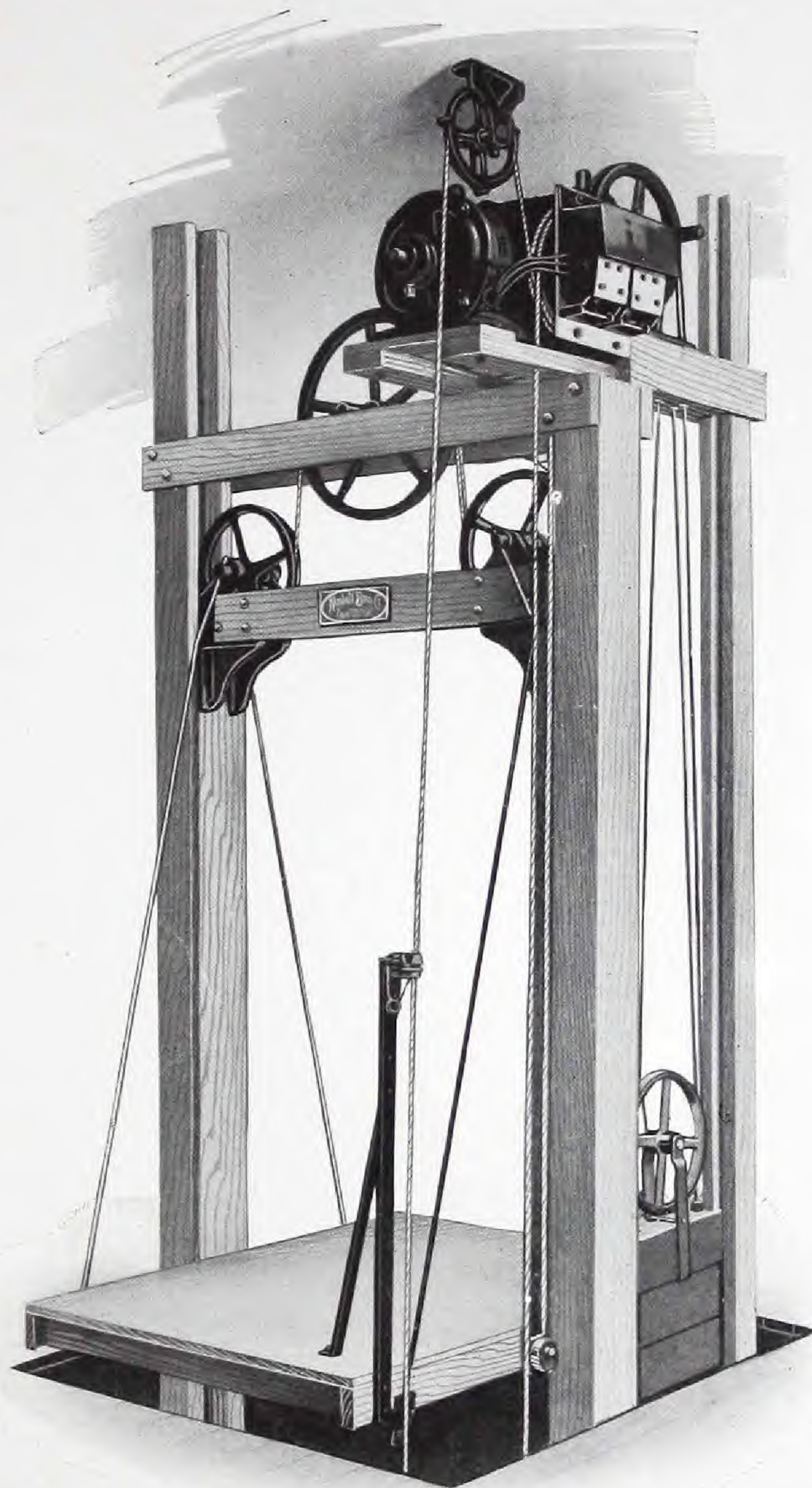
Five Horsepower Machine

Direct connected, straight line drive, overhead traction dumb waiter machine, with electric brake.

Built Also for Basement Installation

Light Electric Elevator

Self Supported

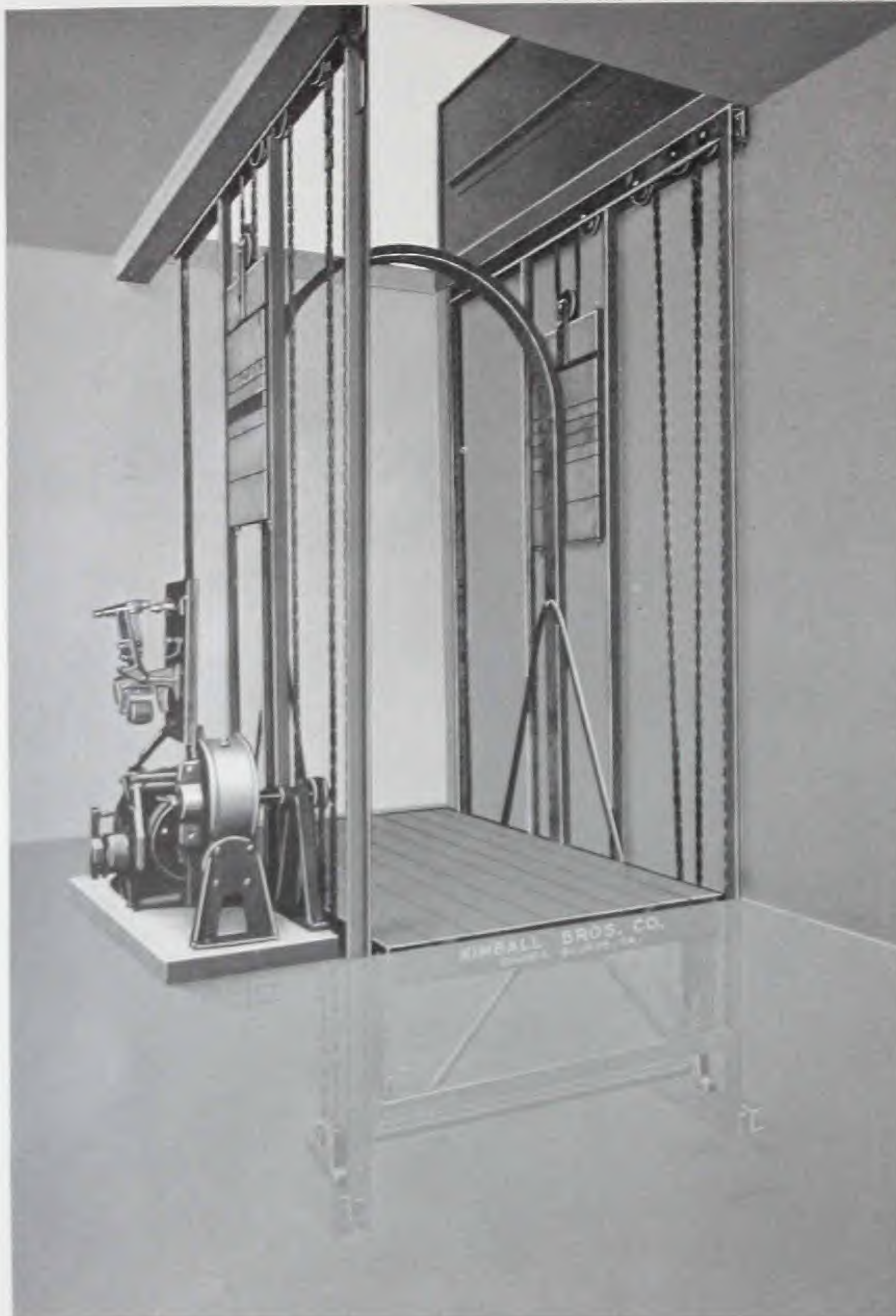


Kimball Light Electric

The machine of a thousand uses. Suitable for all types of buildings, hospitals, grocery and hardware stores, warehouses, apartments, hotels, furniture and undertaking establishments, creameries, bakeries, in fact any type of building, old or new, where there is much floor to floor traffic. Built in three sizes. 1,000-lb., 1,500-lb. and 2,000-lb. capacities.

Write for Special Pamphlet

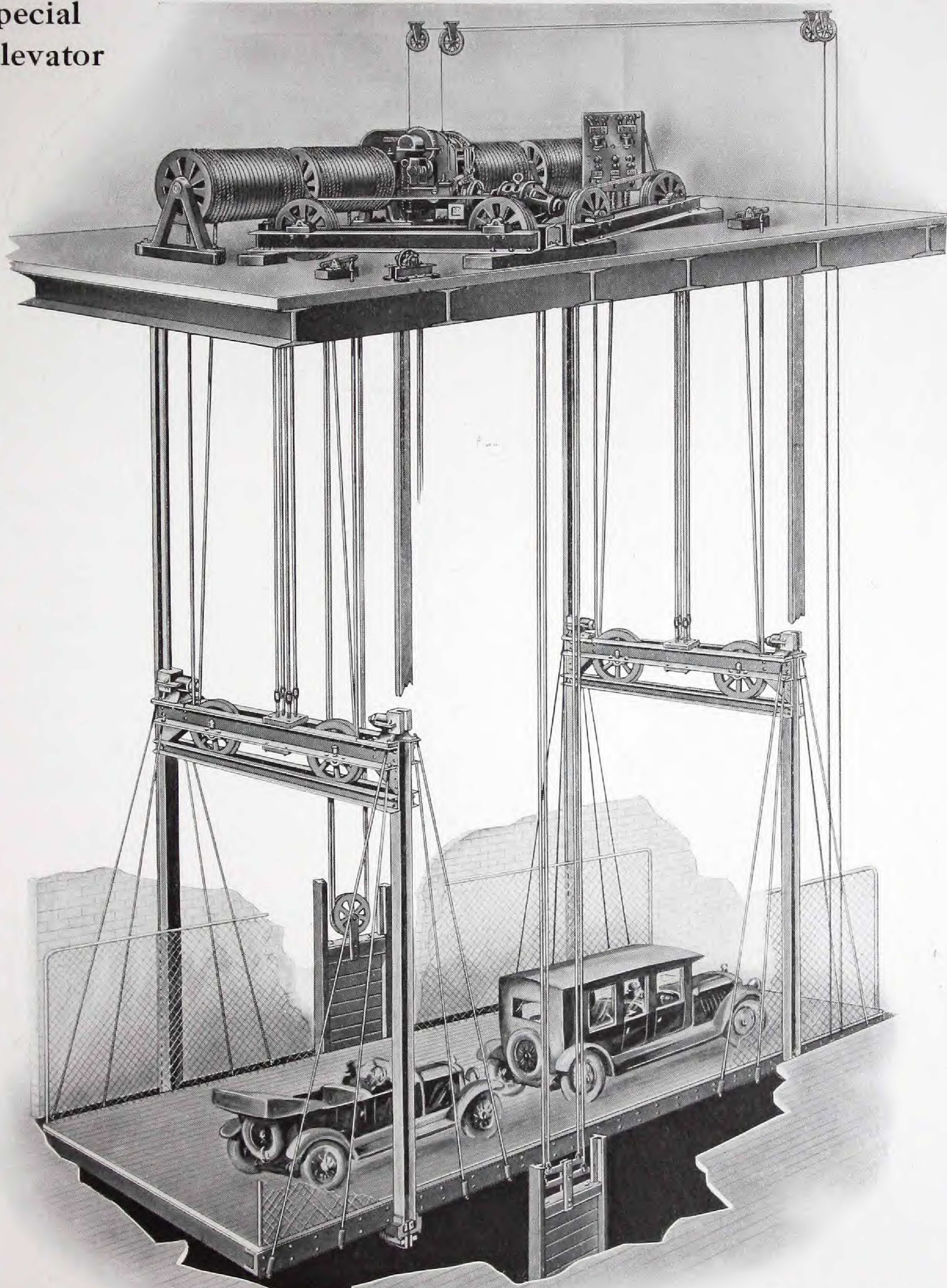
Special Power Elevator



Electric Sidewalk Elevator or Ash Hoist

Made to operate on single- or multi-phase current. Push button controlled. Adapted for schools, hotels, warehouses, or any type of building.

Special Elevator



Extra heavy four-post
automotive and tractor
elevator

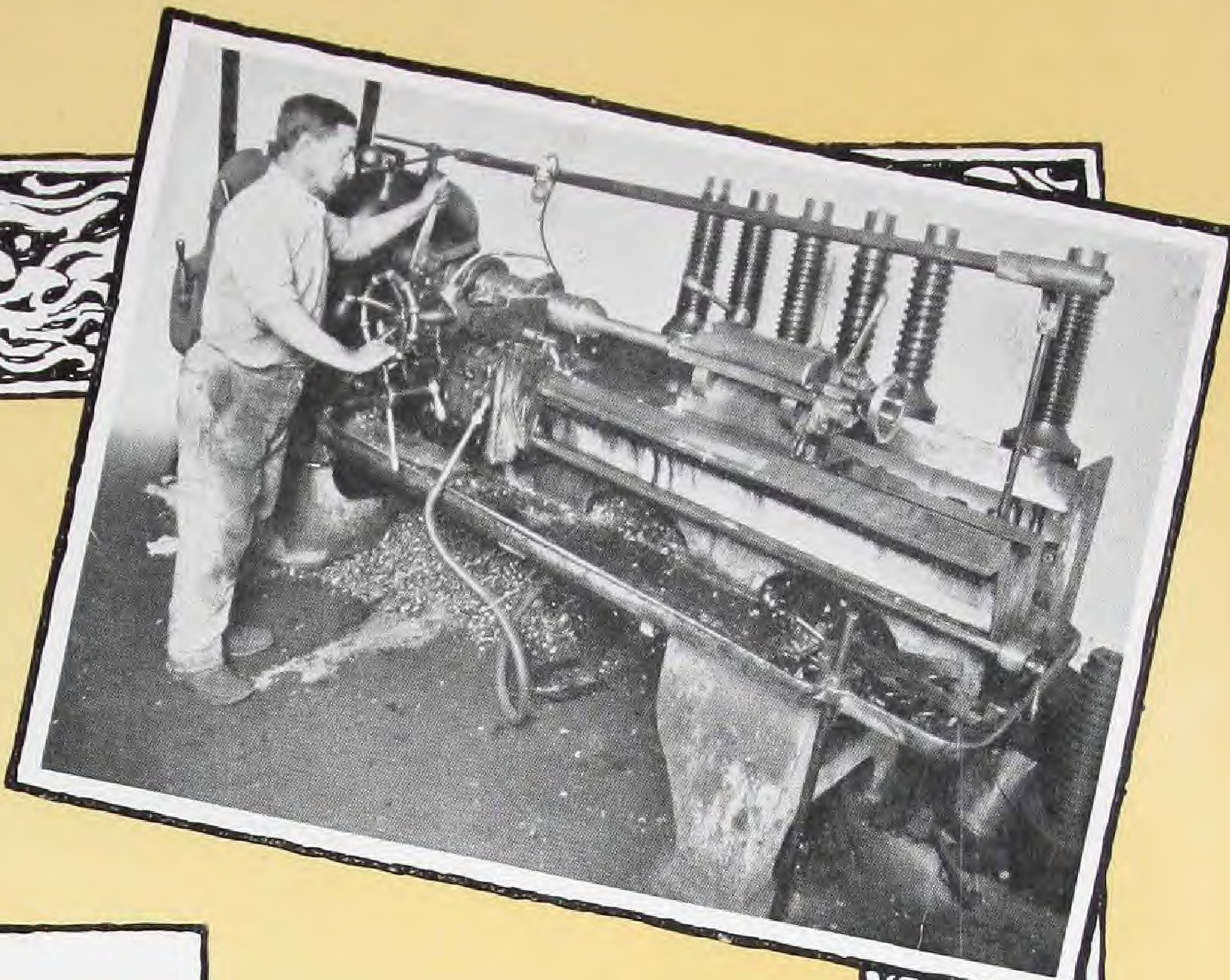
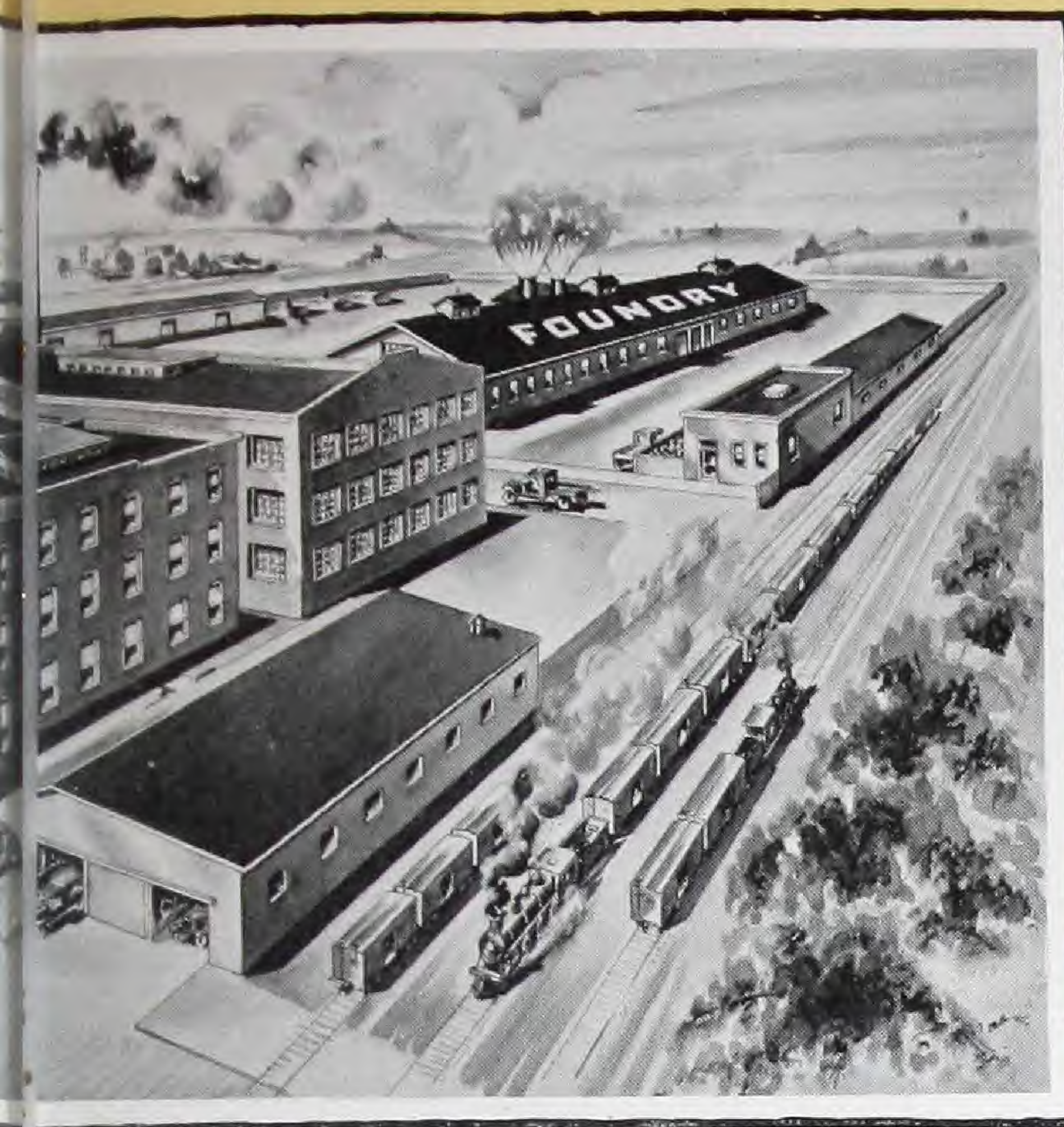


KIMBALL ELEVATORS
 floor in a modern, fully
 according to a standard
 terns, special gauges and
 years of manufacturing

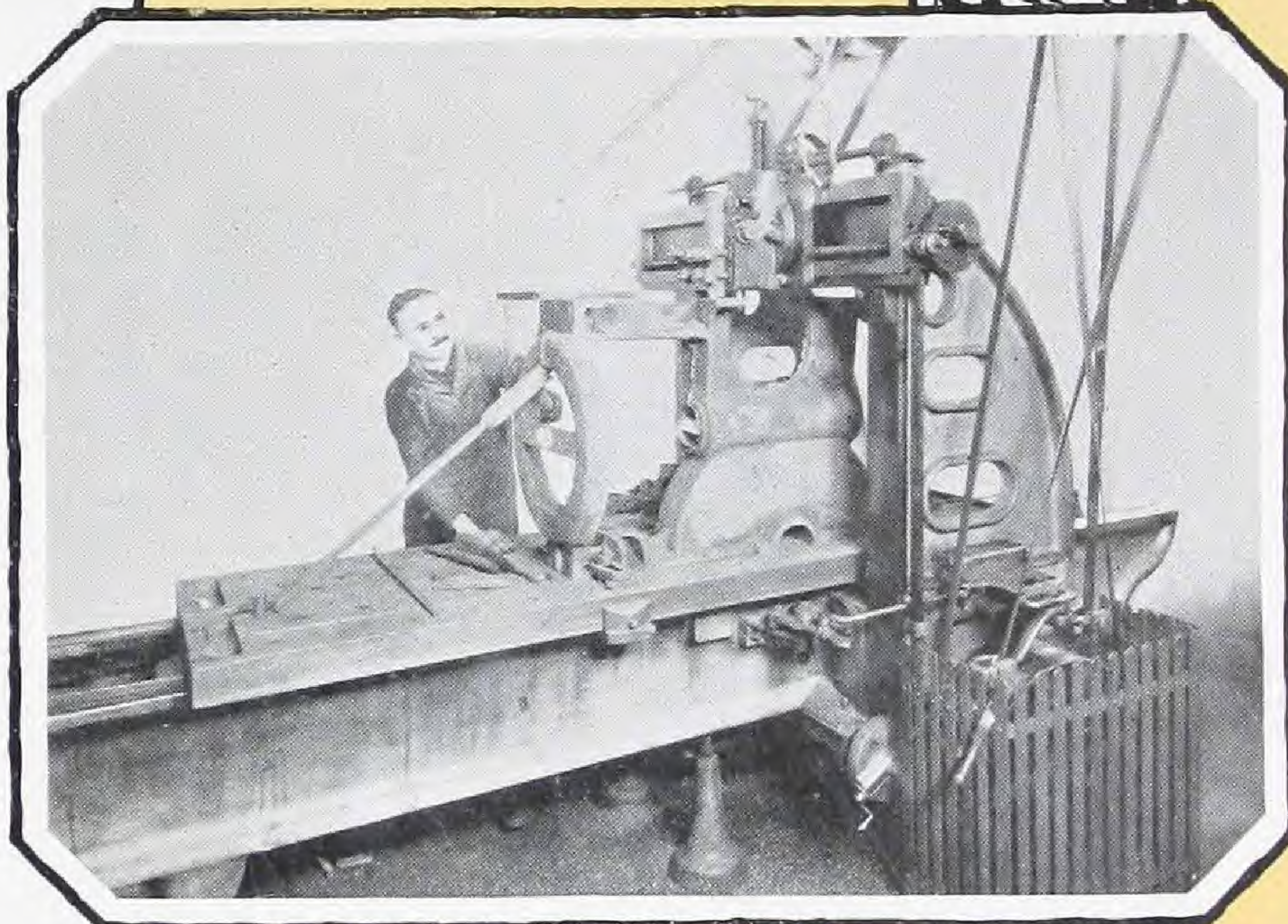
Kimball Elevator part is interchangeable
 furnished immediately on any machine
 machinery was especially designed and

You will find Kimball Elevators back

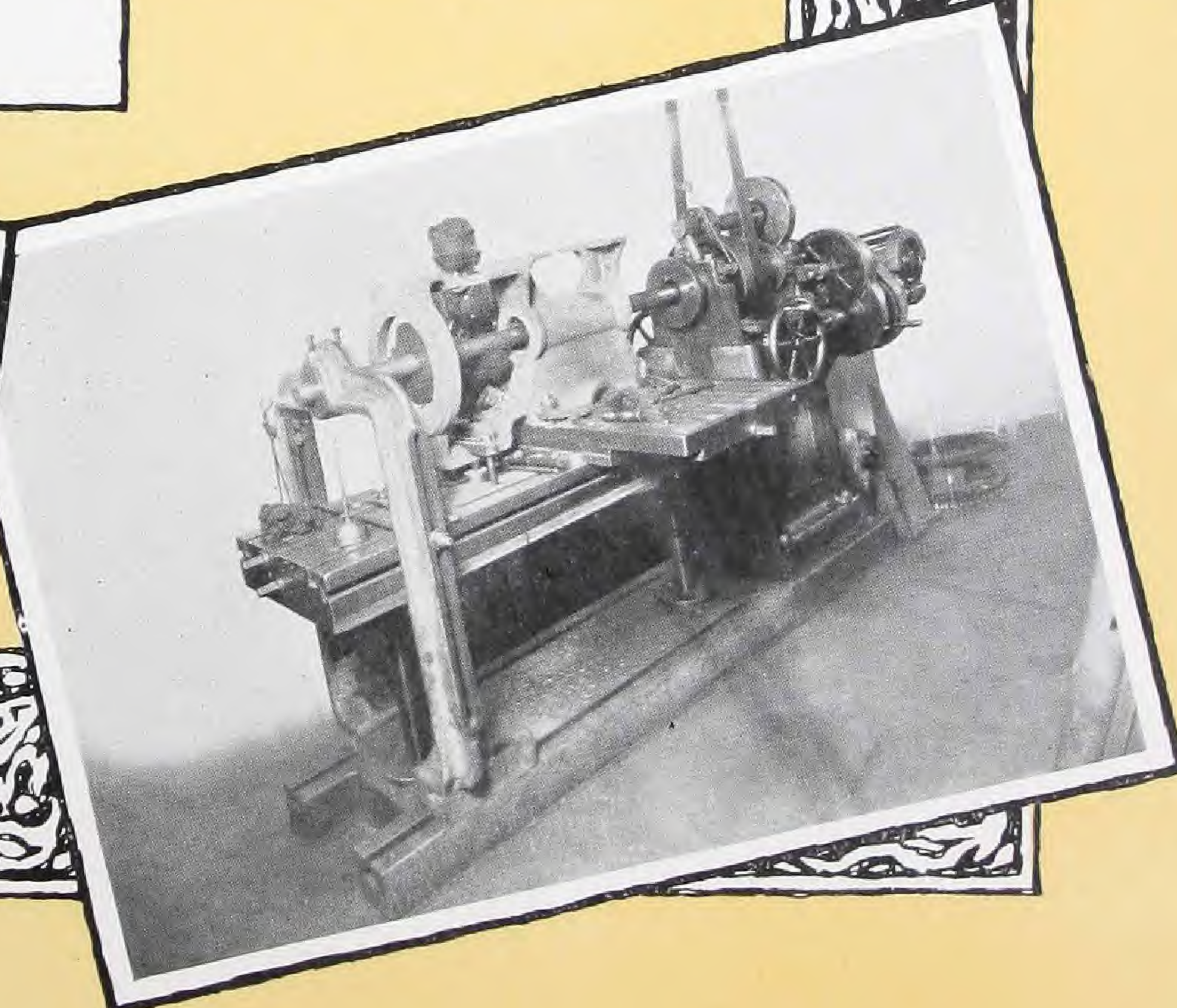
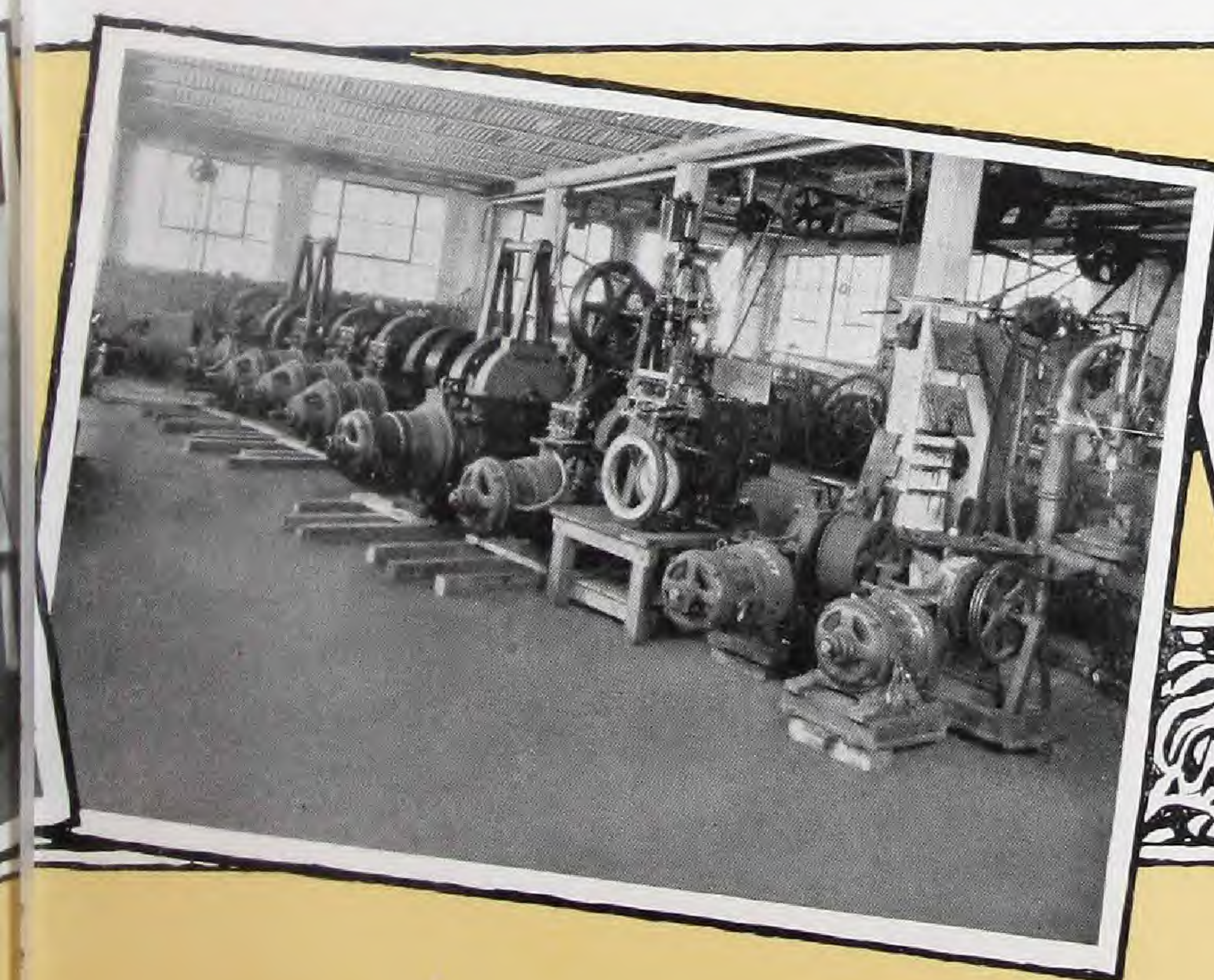




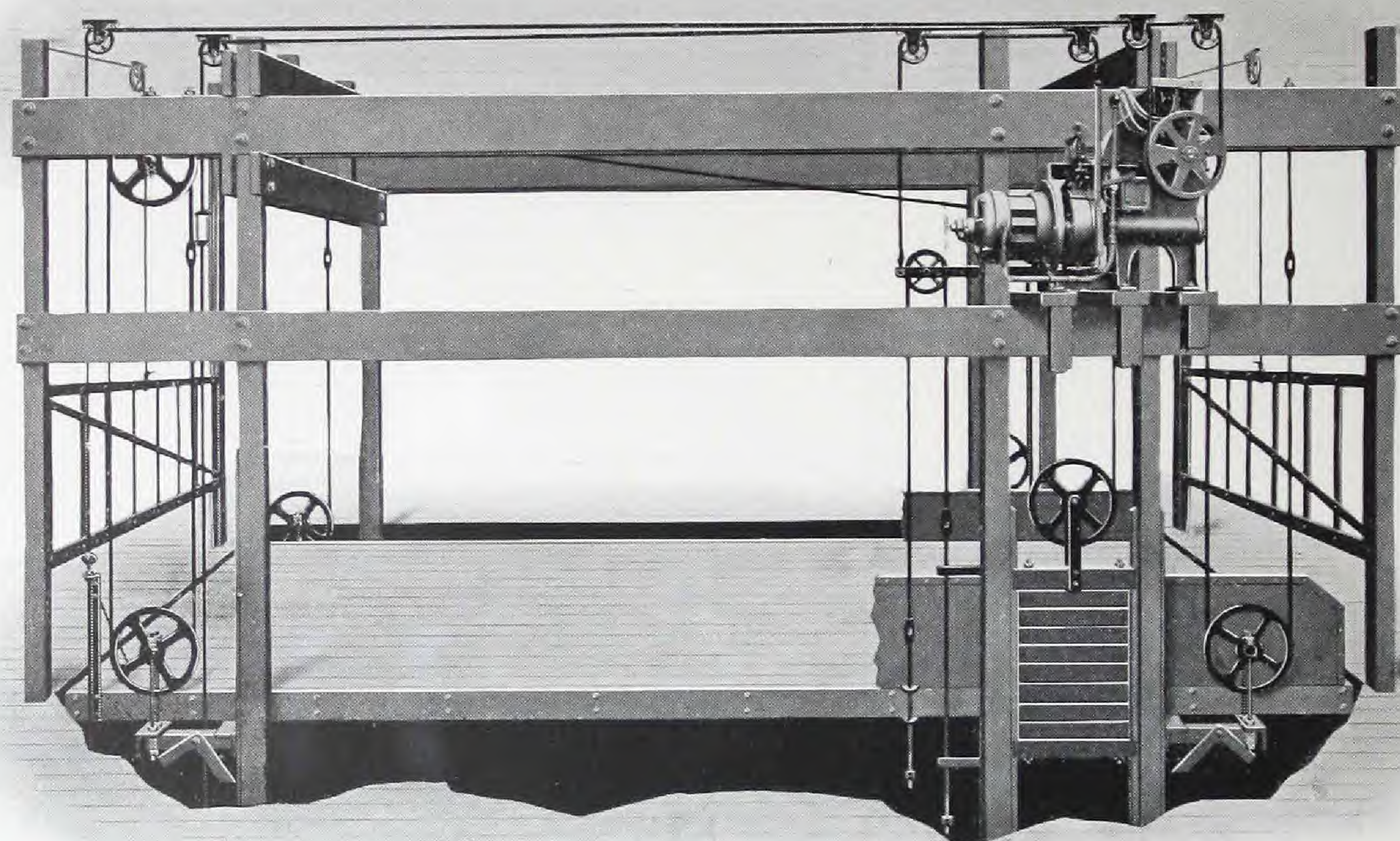
a built complete from foundry to shipping
 equipped factory. All parts are machined
 on schedule. Our investment in jigs, pat-
 templates represents a development of forty
 expense and a fortune in capital. Every
 and standardized so that repairs can be
 manufactured by us. Our production
 ide to produce Kimball Elevators.



by factory service of the highest character.



Automobile Elevators



K Type Automobile Elevator

The very latest and best automobile elevator on the market. Built extra heavy to stand the hard service of constant use. Everything is furnished complete, ready to erect—sawed, drilled and fitted in our factory, knocked down for shipment.

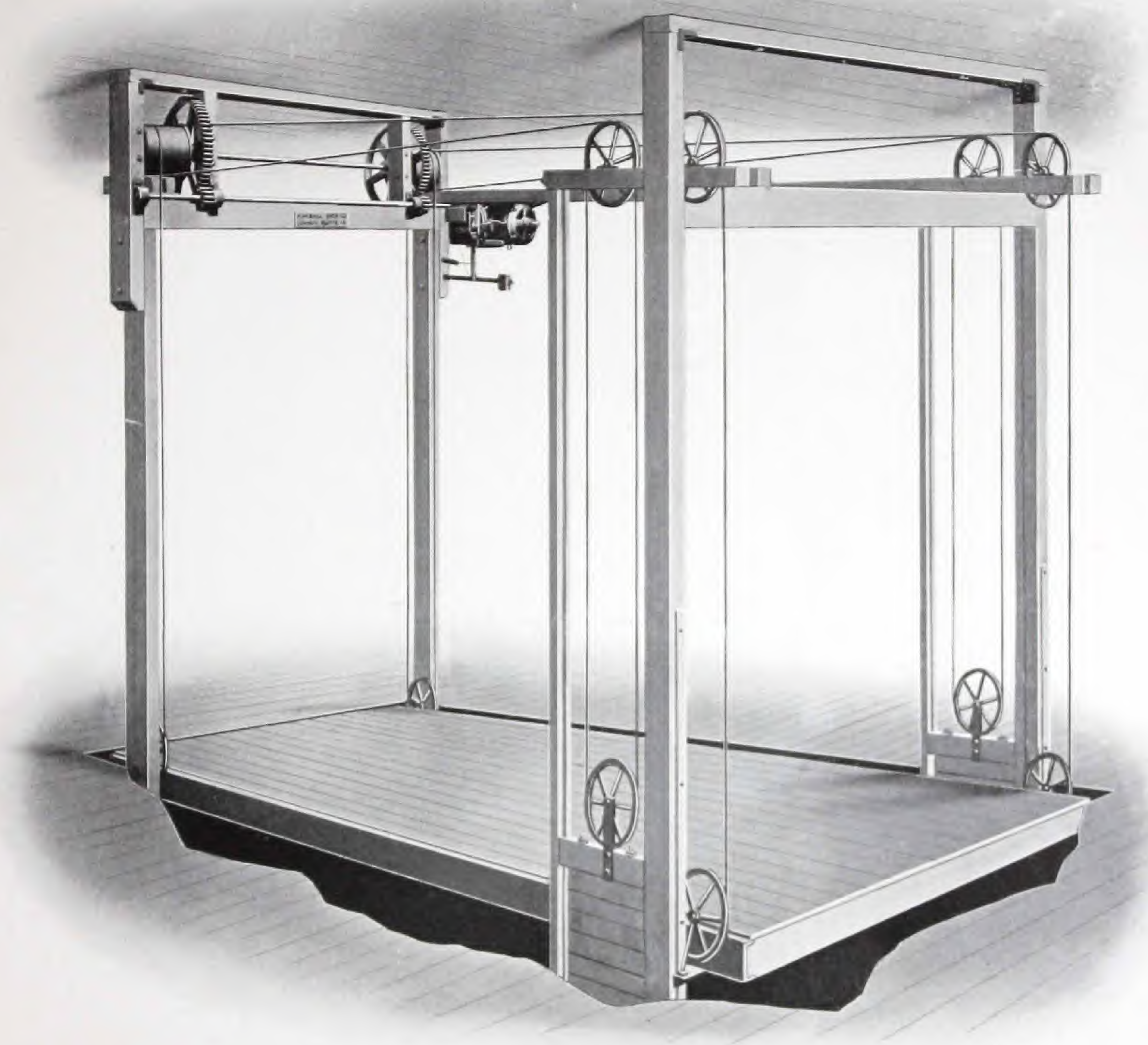
Equipped with six $\frac{1}{2}$ -inch hoist cables, doubled back, equal to 12 cables. Steel enclosure on car. Steel channel platform sides. Equipped with automatic safety catches and special safety

attachment, with governor. Cannot over-travel in either direction. If car or weights are interrupted in their travel this device automatically stops the motor, the switch is thrown out and the brake applied.

This elevator can be installed under 10-foot ceiling, provided loading and unloading is done at one end only on the top story. Four-post construction. Double brace and truss rods under platform. Built for service.

Get Our Special Pamphlet Describing This Super Auto Elevator

Automobile Elevators



No. 7 Electric Automobile Elevator

A similar elevator to our No. 2 automobile elevator, excepting it is equipped with six $\frac{1}{2}$ -inch hoist cables instead of flat leaf steel chains. These cables are doubled back, equal to 12, giving a tensile strength of 96,000 pounds. This elevator has a capacity of 5,000 pounds and a speed of 9 feet per minute. The speed reduction is obtained further than the worm gear machine by use of cast iron gears and pinions. Having four posts, one at each corner, it is especially rigid and all vibration is eliminated. Two

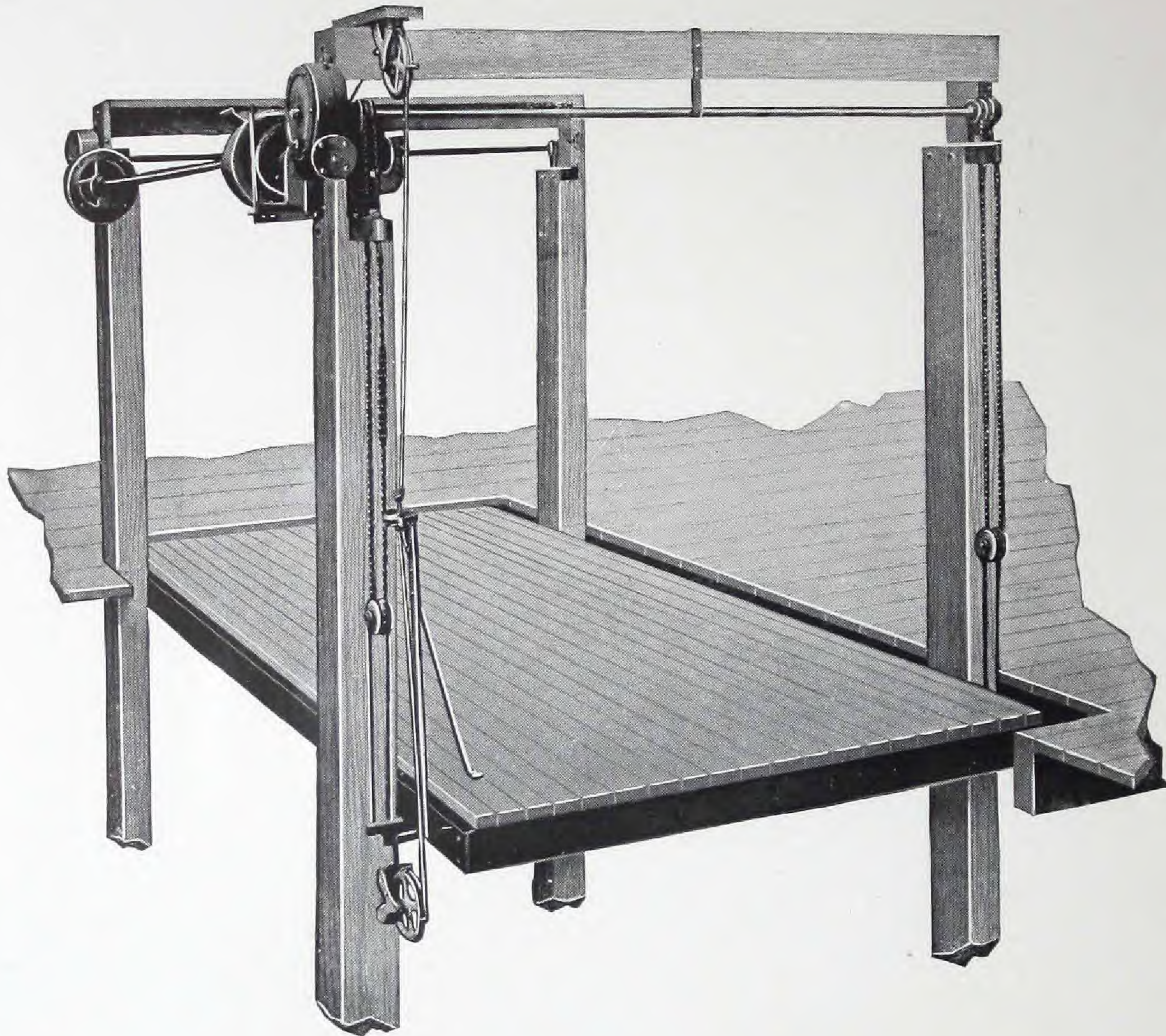
stacks of weights, one on each side of the platform, give a perfect balance and insure easy and smooth operation.

The machine is equipped with motor, control switch and worm drive. It is very powerful, simple in construction and of the latest straight line design.

This elevator is especially recommended where average elevator service is required; can be installed by any mechanic and makes a very practical, strong, well built, safe garage elevator.

Get Our Special Pamphlet on This Machine

Automobile Elevators



No. 2 Electric Automobile Elevator

An inexpensive, safe and serviceable Chain Electric Automobile Elevator. Particularly adapts itself to paint shops, Ford garages and auto elevator service in general where only average elevator service is required. Operates at a capacity of 4,000 pounds, and a speed of nine feet per minute. This elevator is exceptionally well constructed; has four posts, steel platform sides, heavy flooring, double worm, and two worm

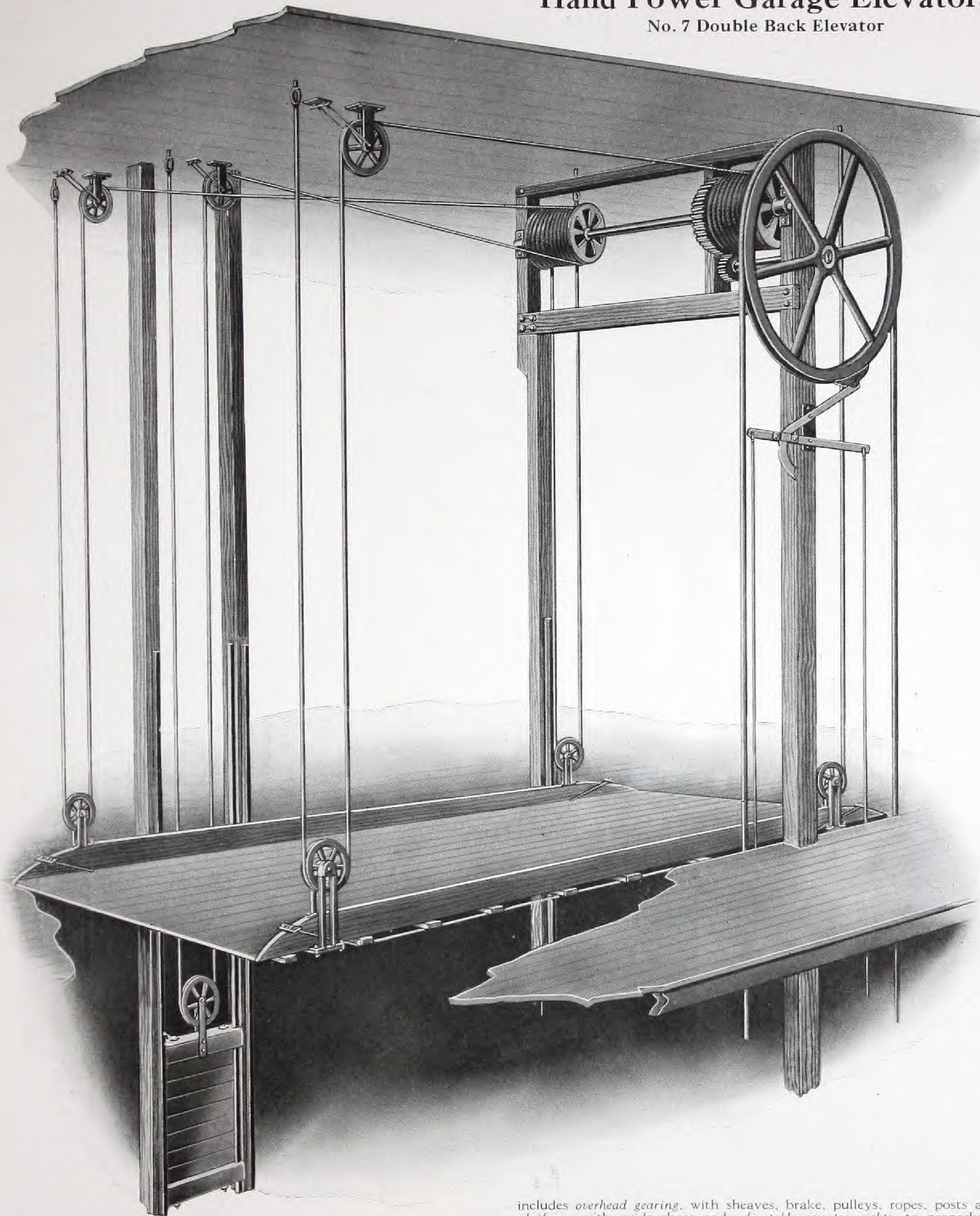
gears. Equipped with standard elevator motor, either alternating or direct current. Hoisting is done by four steel chains doubled back, equal to eight, giving a total tensile or breaking strength of 32,000 pounds. This elevator is well constructed and powerful; guaranteed to give satisfaction.

Machine can be installed under a ten-foot ceiling, giving eight-foot clearance between top of platform and underside of overhead machinery.

Get Our Special Pamphlet on This Machine

Hand Power Garage Elevators

No. 7 Double Back Elevator



Hand power elevators for handling automobiles are frequently desirable where there is not sufficient work to warrant the installation of power elevators; as, for example, in the repair department or the paint shop, for dead storage, or for the showroom.

The Kimball Automobile Elevator, like all Kimball equipment, is strong, simple and dependable. The Kimball Electric Attachment, illustrated on page seven is frequently used in connection with these outfits, thus permitting the use of power for lifting loads at comparatively little expense. The complete equipment

includes overhead gearing, with sheaves, brake, pulleys, ropes, posts and strong platform, with guide shoes and adjustable counterweights, to properly counter-balance platform; also guide posts for platform and counterweights for total height.

This machine has a capacity of 4,000 pounds, is of the cable type and equipped with roller bearings throughout of the quick rising, easy to operate type. The platform is heavily trussed with irons and is built for hard usage. It is operated by five $\frac{1}{2}$ -inch cables, each doubled back. The drums are scored special to fit the cables. With the aid of the large, heavy pull wheel, leverage is obtained that enables one man to raise its capacity with ease.

Built in Standard Sizes of 8x14, 8x16 and 8x18 Feet

No. 2 Hand Power Elevator

This elevator is the simplest, most practical, easiest to operate and quickest to raise on the market. There is little to get out of order. It is our latest improvement on hand elevators and differs from all others on the market.

Having no gear or clumsy drums, it runs with little friction.

All bearings being roller type, it needs no oiling.

The car is fitted with rollers that roll against the guides; there are no sliding surfaces. The counterweights are heavy enough to raise a small

load when the brake is released. The hoist chains are made of steel and run smoothly over small steel sprockets. The car has heavy safety catches to catch and hold car should chains break.

This elevator is well introduced, having been in successful operation for 40 years. Can be put together by any carpenter or mechanic at one-half cost of installing other types. We furnish them complete, ready to install.

Below are a few of the superior features which make this elevator safer and better than any other hand elevator on the market for all-round efficiency and general use.

Safeties—Car equipped with heavy double safety catches positive in action.

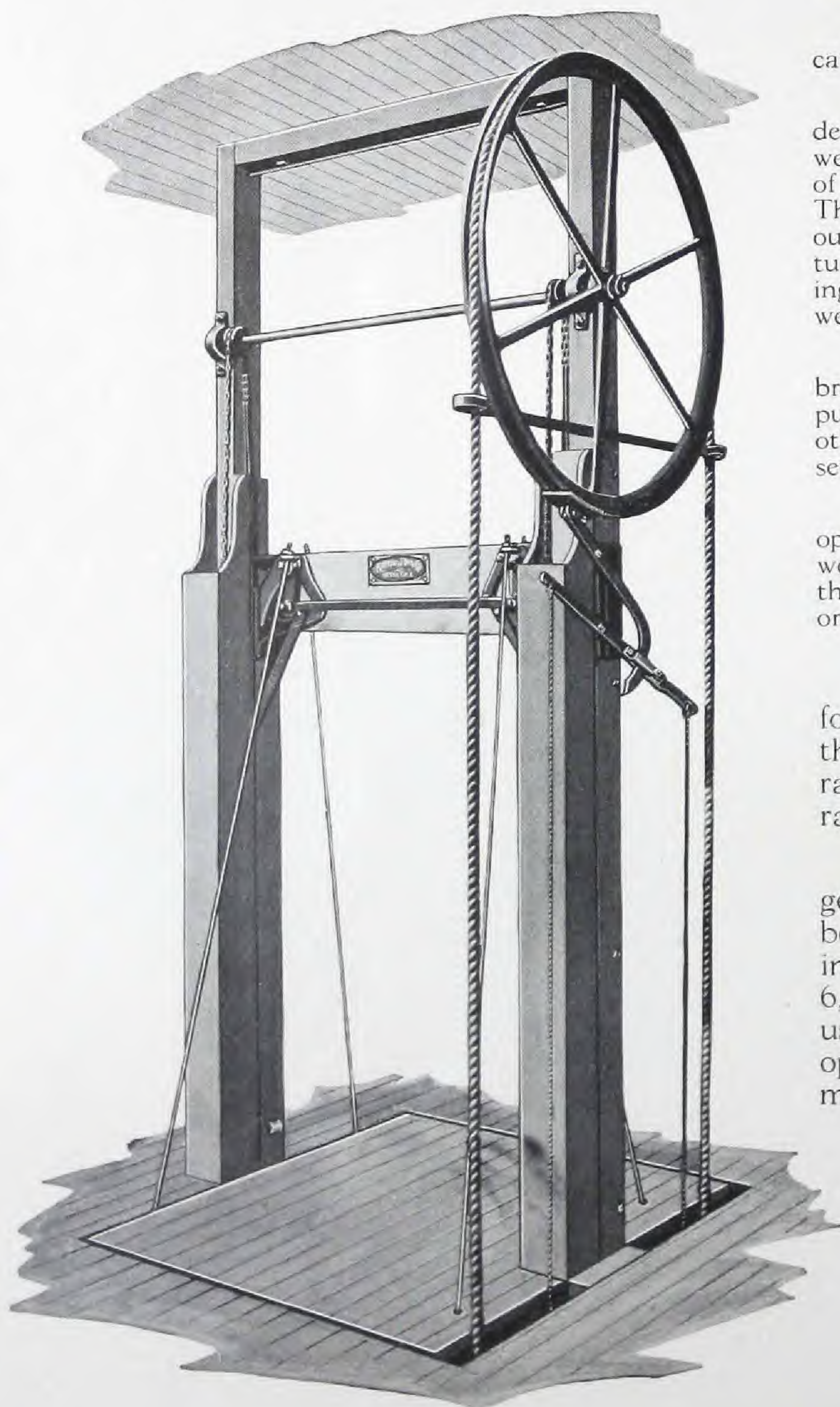
Safety Over-Riding Protection—A patented safety device to prevent accidents caused by car or weights running into the overhead work. An accident of this kind cannot happen on the No. 2 chain elevator. This over-riding device automatically raises the chain out of the sprockets, allowing the shaft and wheel to turn free without raising the car. It prevents the hoisting of the car or weights beyond a fixed limit and car or weights cannot be jammed into the overhead machinery.

Brake—The brake can be handled by either of two brake ropes. A new operator cannot make the mistake of pulling the release rope instead of the brake rope as in other types of elevators. Pulling either rope, either way, sets the brake.

Chains—This elevator is a chain elevator, and is not operated by cables. The constant bending of cables soon weakens them, causing them to break. The chains on this elevator fit the sprockets perfectly and do not strain or twist them. They will outlast cables many times.

The pull rope travels only 17 feet to every one foot raise of the platform. On all other elevators the pull rope travels from 22 to 30 feet per foot raise of platform. This makes it especially quick raising.

There are no noisy, rattling, clumsy drums, gears or pinions on this elevator. All friction lost between such gears and drums is eliminated, making it easy to operate. There are approximately 6,000 KIMBALL No. 2 Chain Elevators now used in the United States, some having been in operation for 40 years, and are good for 40 years more.



**Ask for Our Special Booklet
on This Elevator**

No. 2 Elevator

Equipped With Electric Attachment

With the addition of the small electric machine and motor shown below, your No. 2 hand power, or any hand power elevator can be easily converted to a direct connected, practical and labor saving electric, having a capacity of 1,800 pounds and a speed of 20 feet per minute. The cut shows attachment in place. It occupies about three cubic feet of space. The installation is simple and necessitates removing only the large pull wheel and placing the machine on the same shaft in its place.

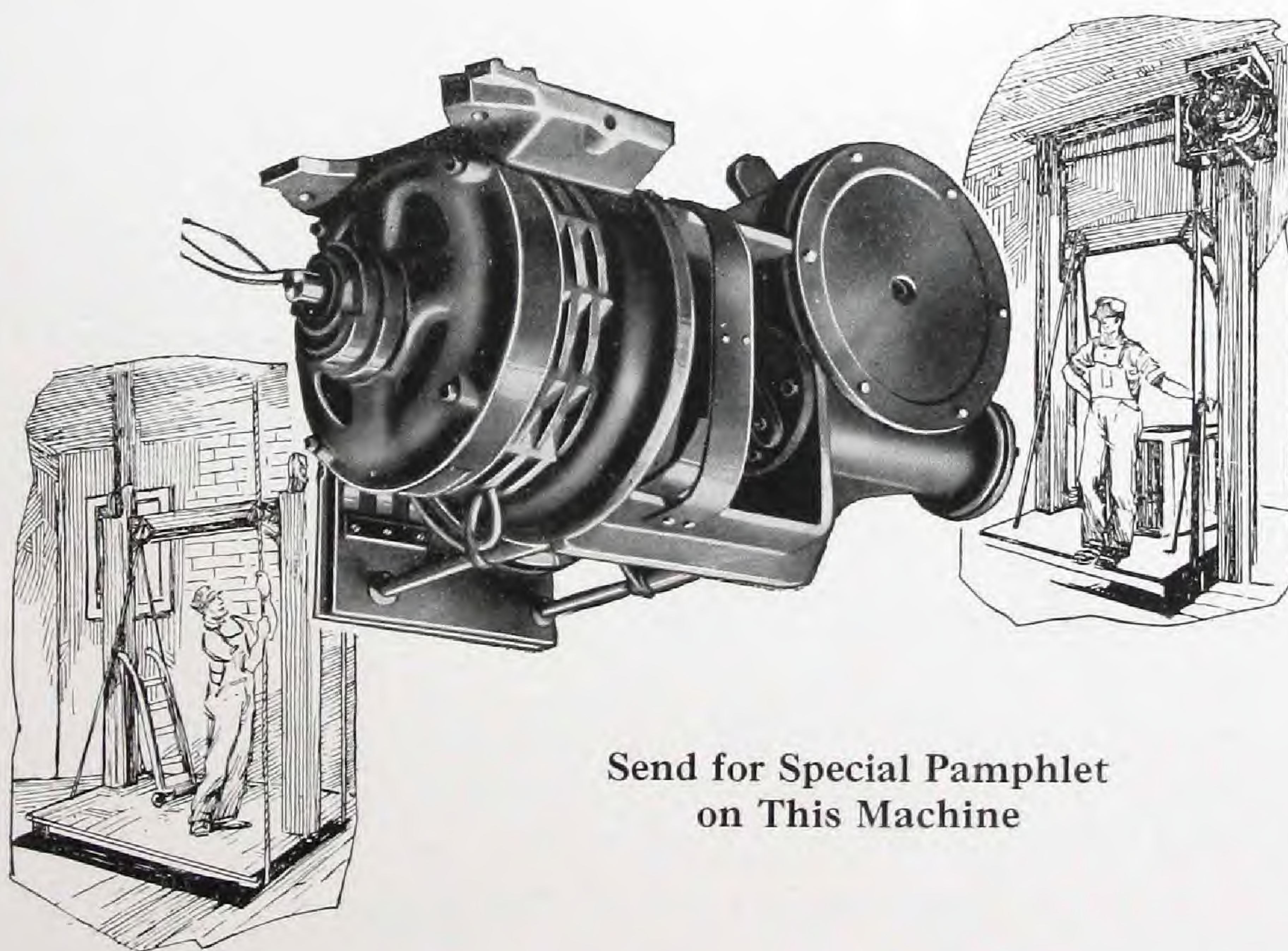
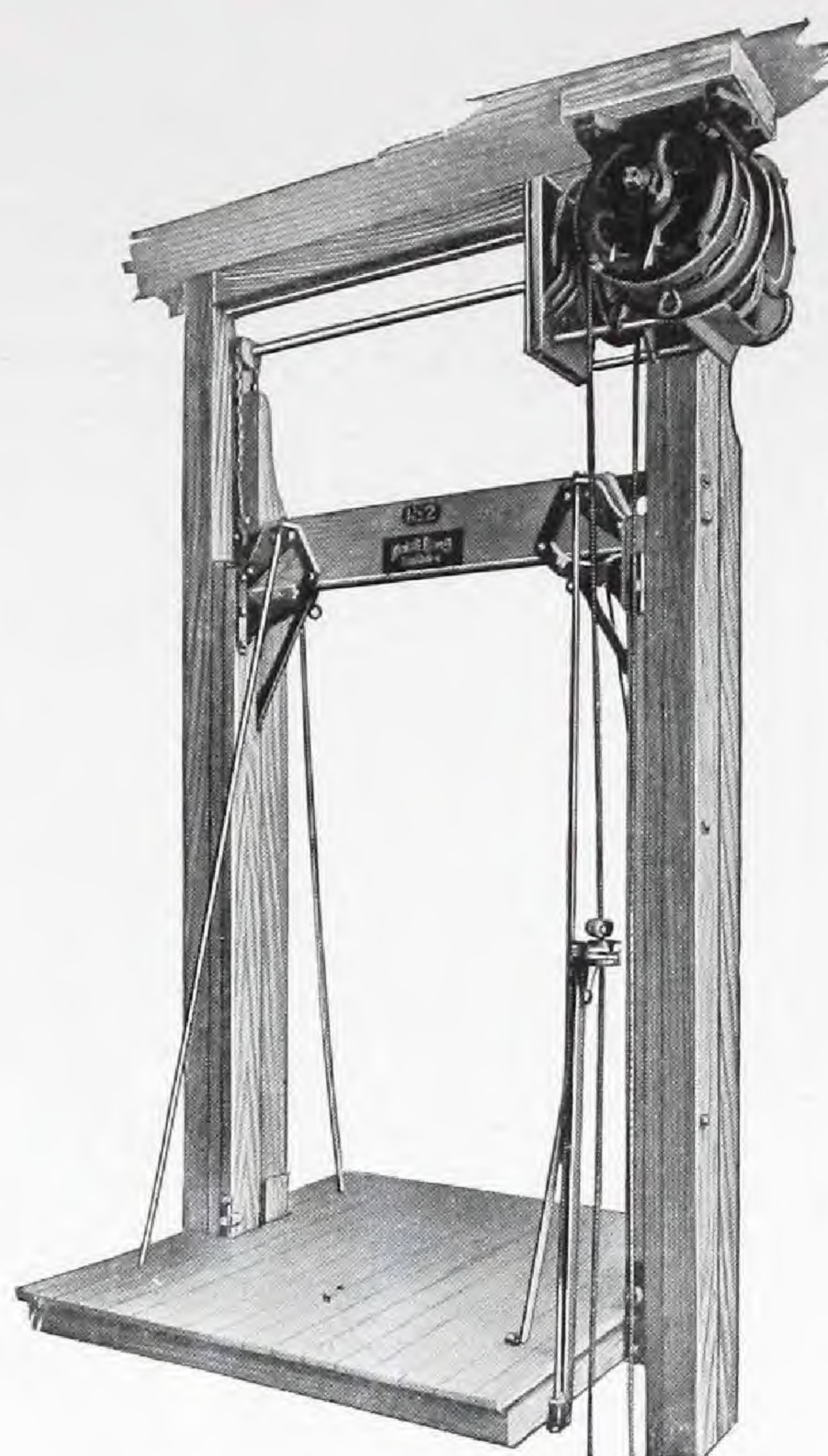
In sending for information give characteristics of current, whether AC or DC, and distance from top of shaft to pit.

This attachment is far superior to any belted or rope-driven type of attachment.

Let us quote you on this practical machine.

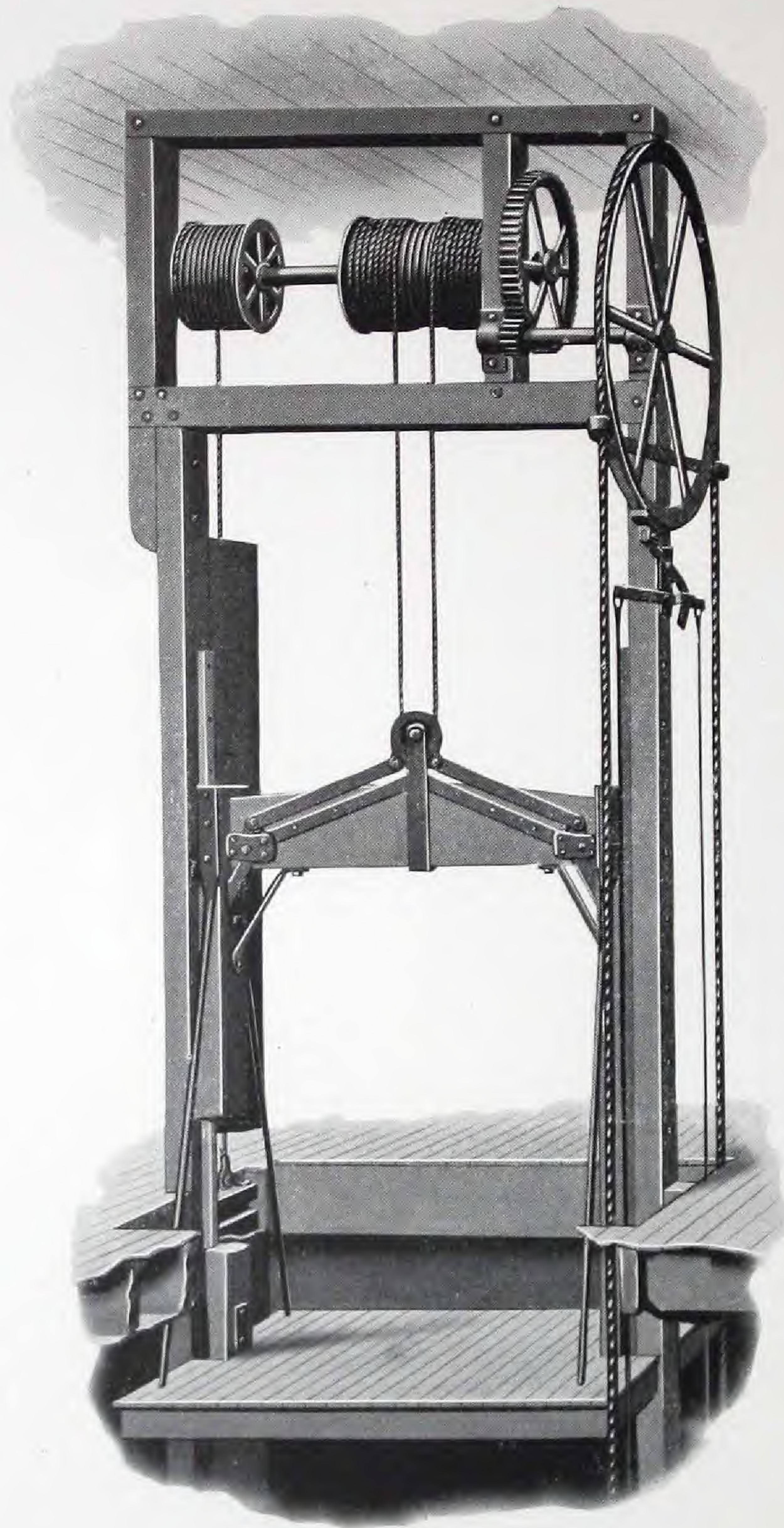
This machine adapts itself and can be readily installed on hand power elevators of any make.

Let us figure for you the capacity and speed at which it will operate your elevator.



Send for Special Pamphlet
on This Machine

Special Hand Power Elevators



No. 4 Hand Power

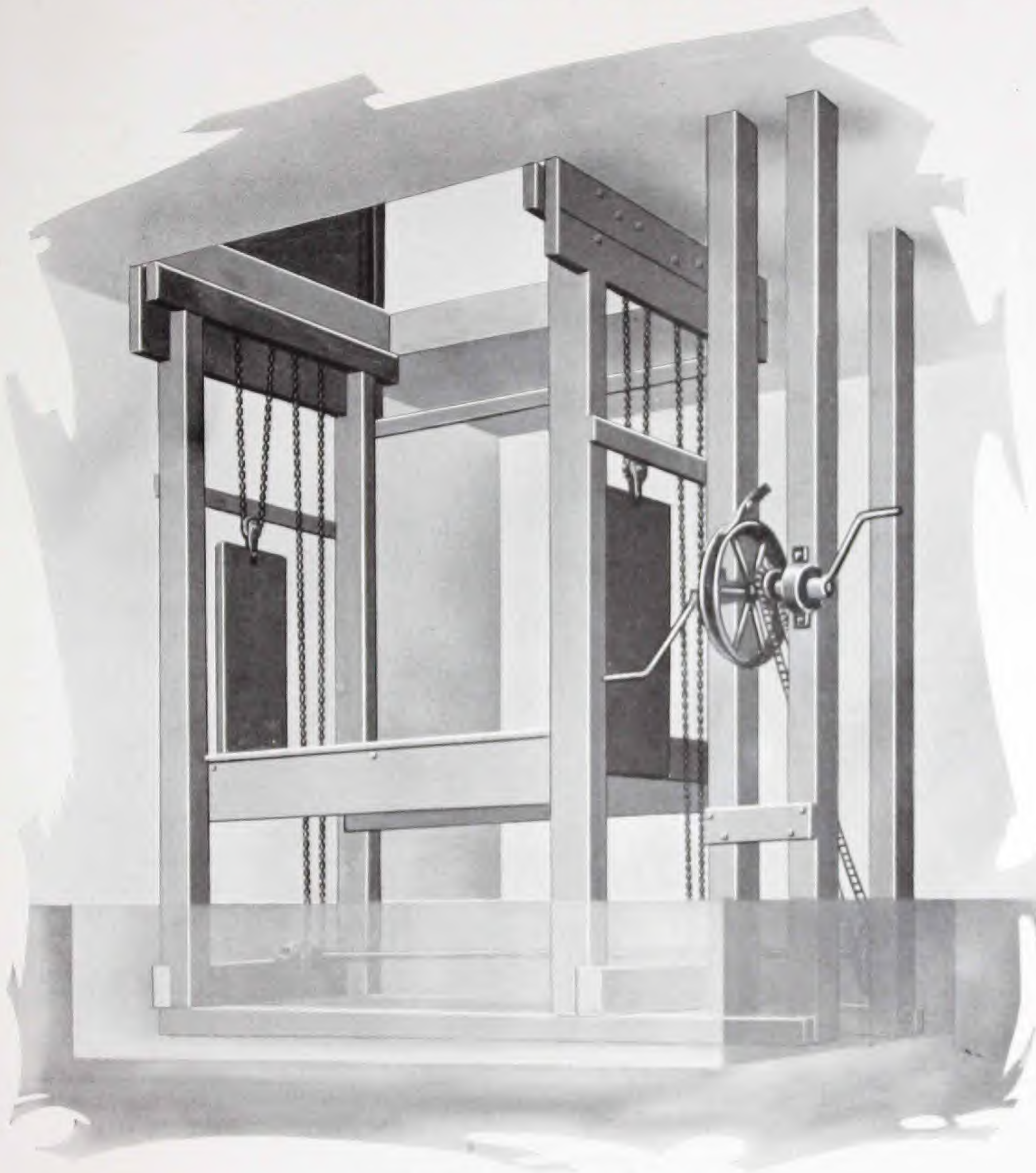
A center lift cable, hand power elevator. Cast iron drums, with grooves to fit the cable. Operated by three iron cables.

Equipped throughout with roller bearings; has no sliding surfaces. A special elevator for unusual service. Capacity, 2,000 pounds; built extra heavy. Built either of wood and steel construction, or all steel.

Let Us Quote You on This Machine

Special Hand Power Elevators

A Big Improvement on Hand Power Sidewalk Elevators



No. 14 Sidewalk Elevator

The No. 14 Sidewalk Elevator is the only hand power sidewalk elevator manufactured with counter balanced weights. With all other makes it is necessary to raise the dead load without the assistance of counter balance.

This machine is operated by a crank in the basement; raises quickly and easily, is simple to install and very useful. A band brake on the wheel enables you to lower the loaded platform at a regulated speed.

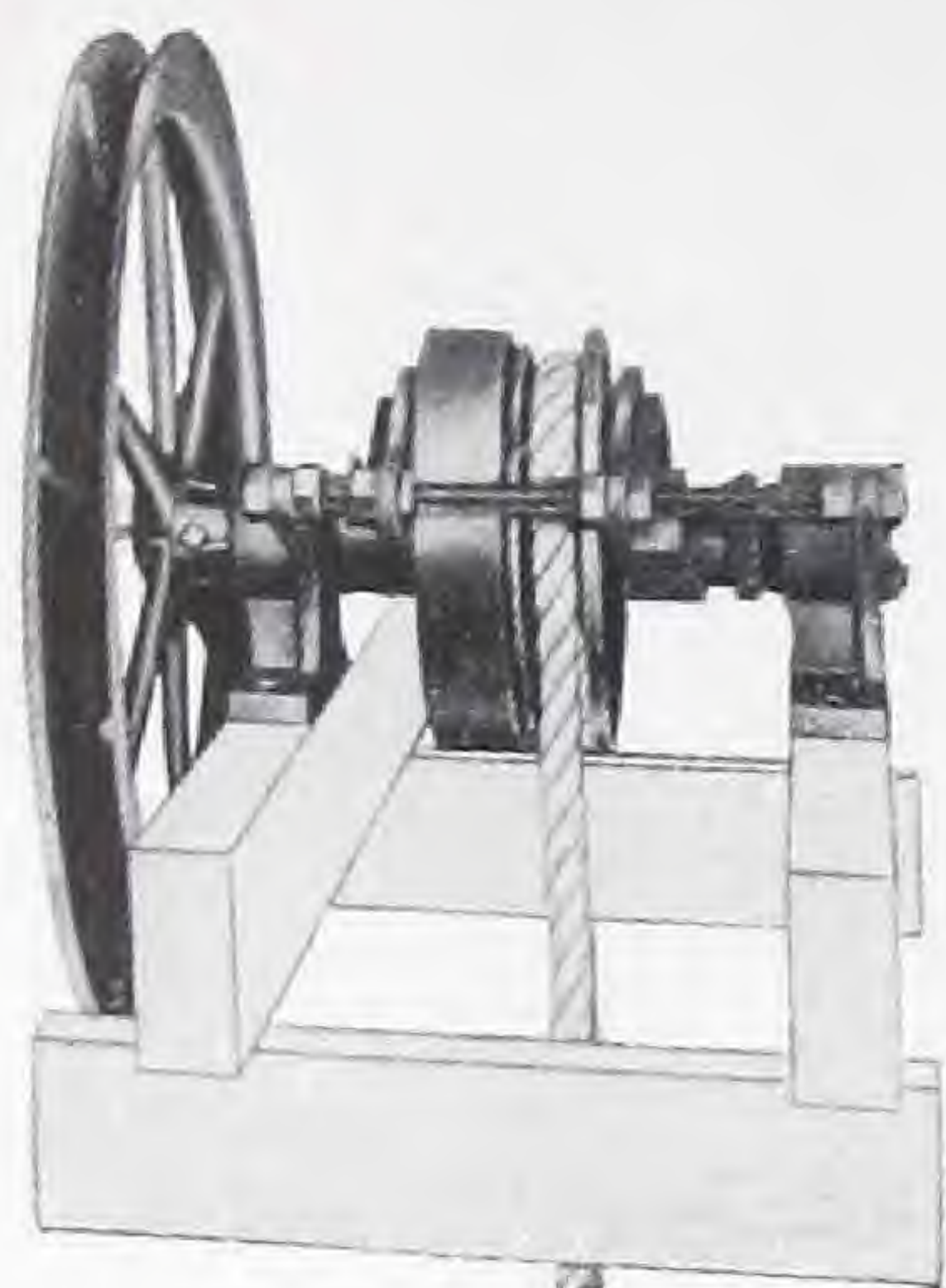
Furnished complete, including all lumber, gearing, iron weights, chain, platform, etc.

Further information gladly furnished.

Hand Power Dumb Waiter Outfits

Number 22

No. 22—Light Type Dumb Waiter
—Rope hoist construction, suitable for private houses, refrigerator use, etc.



No. 22—75 to 100 Pounds

Fitted with self-locking device. When you let go of pull rope the cupboard stops and locks.

We have recently built a great many of the above described dumb waiters for cooling purposes, sending the shaft below the basement floor. We will give you complete information concerning the construction of pit and hatch, how to keep them dry, etc., upon request.

The cupboards are built of sheet steel, reinforced—any size or shape desired.

Number 23

No. 23—Heavy Type Dumb Waiter
—Chain hoist type, suitable for hotel, garages, hospitals, restaurants, cafeterias, etc. This dumb waiter is of the self-locking type, enabling operator to lock car at any position, at will, automatically.

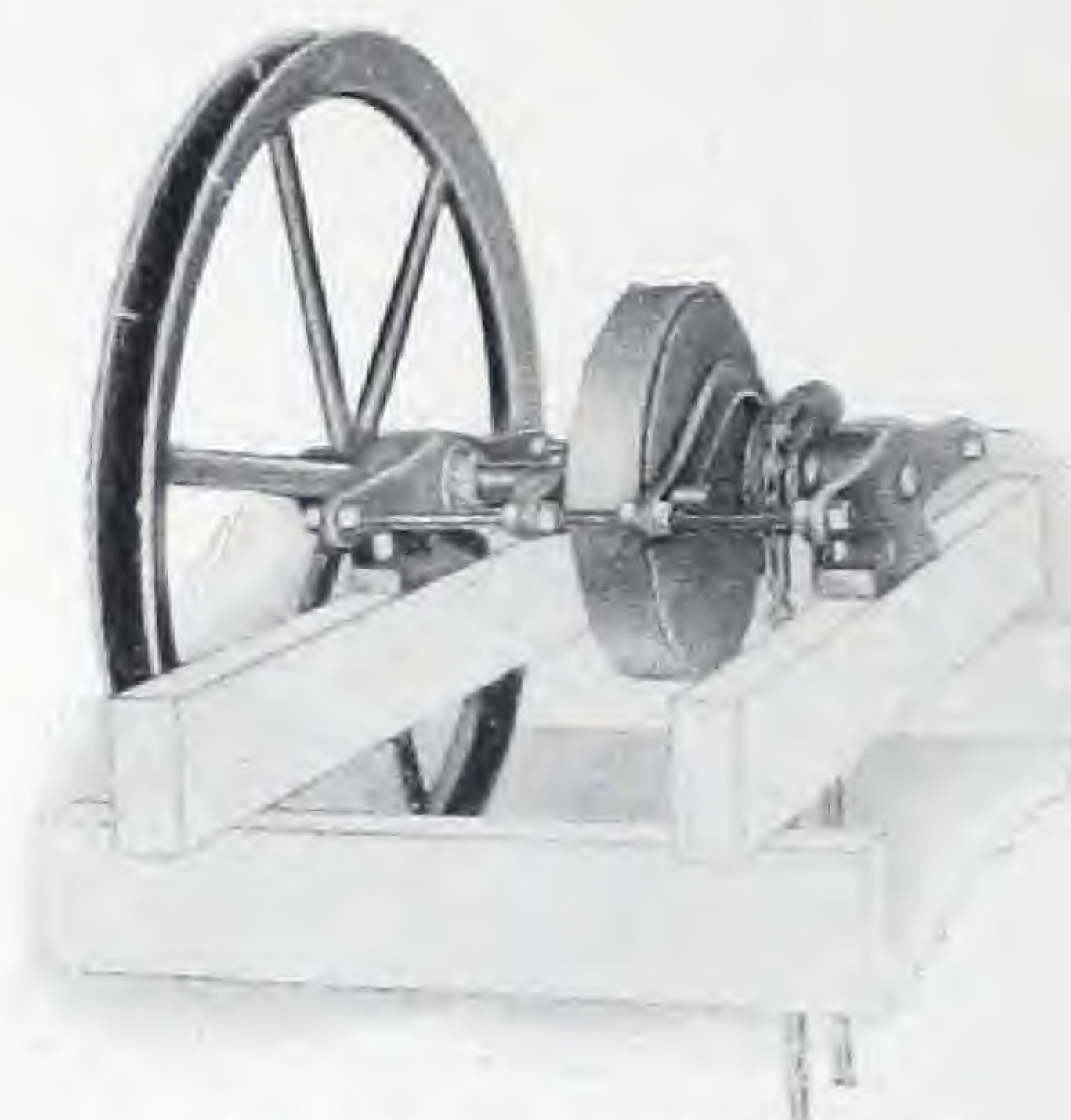
The KIMBALL Chain Dumb Waiter illustrated here is designed for heavier service than dumb waiter No. 22.

Where loads exceeding seventy-five pounds are regularly handled, these outfits will give good results with occasional or test loads up to two hundred and fifty pounds.

In these machines the hand wheel and the lift wheel are on the same shafts, which are then mounted on substantial frames with antifriction steel bearings.

By means of this chain we can increase the leverage so that each pound of pull on the hand rope will raise from four to ten pounds, depending upon the size of the hand wheel, etc. We have these dumb waiters in different sizes and are in position to furnish same for any load.

Cars are made of selected sheet steel. These cars are of special design and



No. 23—100 to 200 Pounds

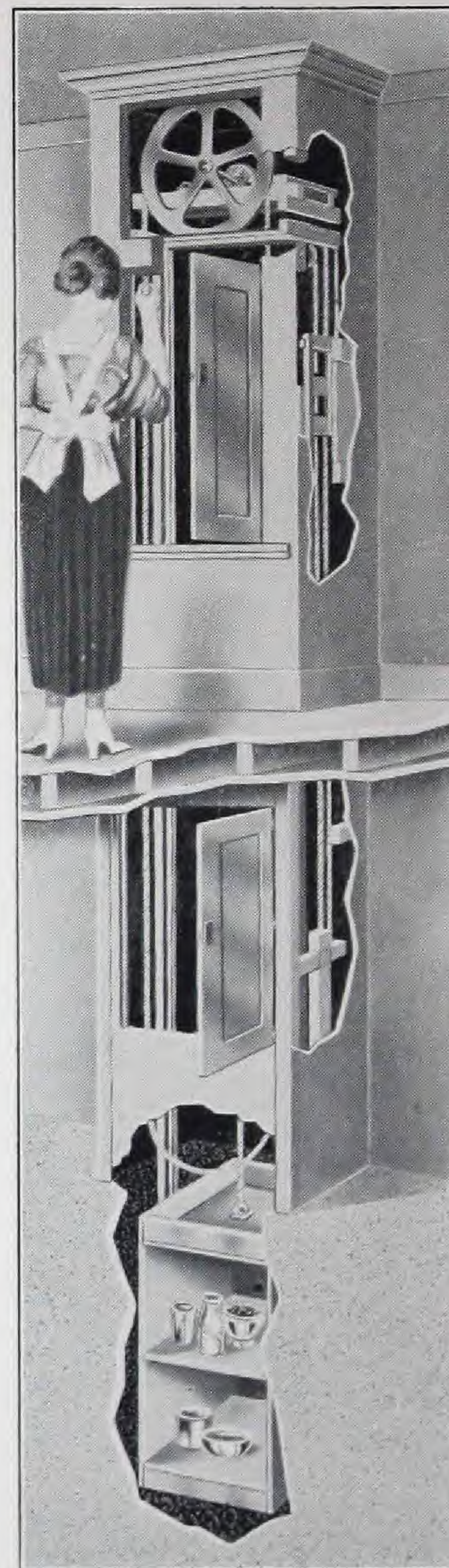
constructed to secure minimum weight and maximum strength. They are superior to wood cars.

The brake does not lock fast, but is applied and regulated by the load, holding the car securely at any point, allowing it to be raised and lowered smoothly and easily without the jumping and jarring common to other automatic dumb waiters.

These machines are superior in principle, design, construction and finish, and are unequalled for durability and safety.

They are manufactured in large quantities with special tools, insuring the greatest accuracy, and are sold at the lowest price consistent with the quality of the mechanism.

All shafting is of steel, and all bearings are fitted with steel anti-friction rollers to reduce friction, the machine running easily, quickly and smoothly.



Iceless Refrigerators

The term "Iceless Refrigerator" is used to describe an arrangement for the preservation of food without the expense, trouble and annoyance of ice.

In most homes the cellar is sufficiently cool to preserve supplies of food which are carried over from one meal to another, and these cool cellars were the only means which our parents had in many cases for the preservation of such food.

Once in a while someone was fortunate enough to have a very cool well or spring of pure water, and food would be placed in a vessel and lowered into this well. Nowadays, however, the effort required to run up and down stairs to carry the food down after meals and to bring it up again when wanted is correctly assumed to involve a greater expenditure of effort than the cost of ice justifies and, therefore, many people resort to the use of the ordinary refrigerator. The use of the Iceless Refrigerator—in other words, a Kimball Automatic Brake Dumb Waiter—as a cabinet in which the food may be placed and then lowered either into the cool cellar or, if the cellar be not sufficiently cool, into a prepared well or pit beneath the cellar floor, is becoming more and more general because a good dumb waiter costs little more than a good refrigerator, and the saving over the use of ice is likely to pay for the dumb waiter in a season or two. The only difference between one of the regular Kimball Dumb Waiter Outfits and an outfit designed to be used as an iceless refrigerator is the furnishing of a heavier counterweight which shall weigh enough to balance both the car and the average weight of food and dishes to be kept in it.

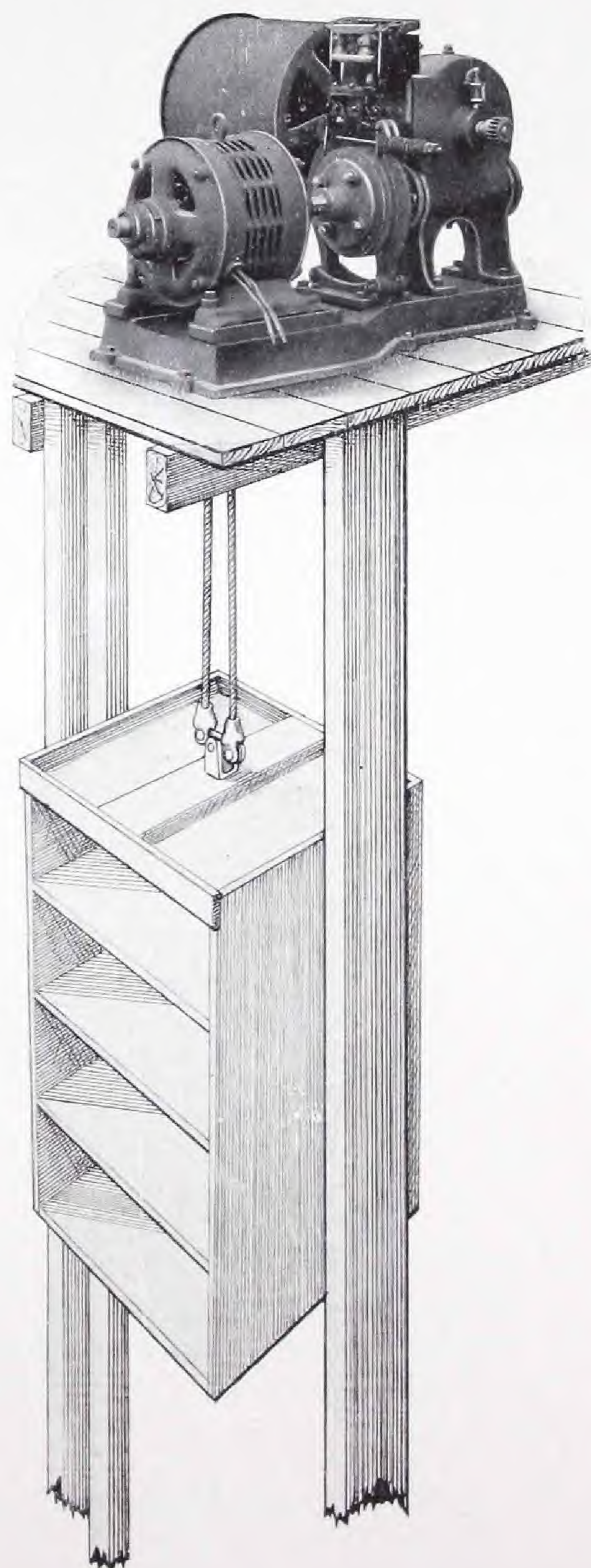
In ordering, therefore, it is well to state what the estimated weight of the usual load will be so that a sufficient amount of extra counterweight may be furnished with the outfit, for which there is a small additional charge.

The special advantage of the Kimball Automatic Brake Dumb Waiter Outfit for this purpose is found in the fact that the Kimball machine is automatic and effective in both directions. If the loaded car should be heavier than the counterweight, the automatic brake prevents the car running down. If, on the other hand, so much of the load be removed that the car is lighter than the counterweight, again the automatic brake prevents the car running up. So, whatever the conditions, no accident can happen.

Power Dumb Waiters

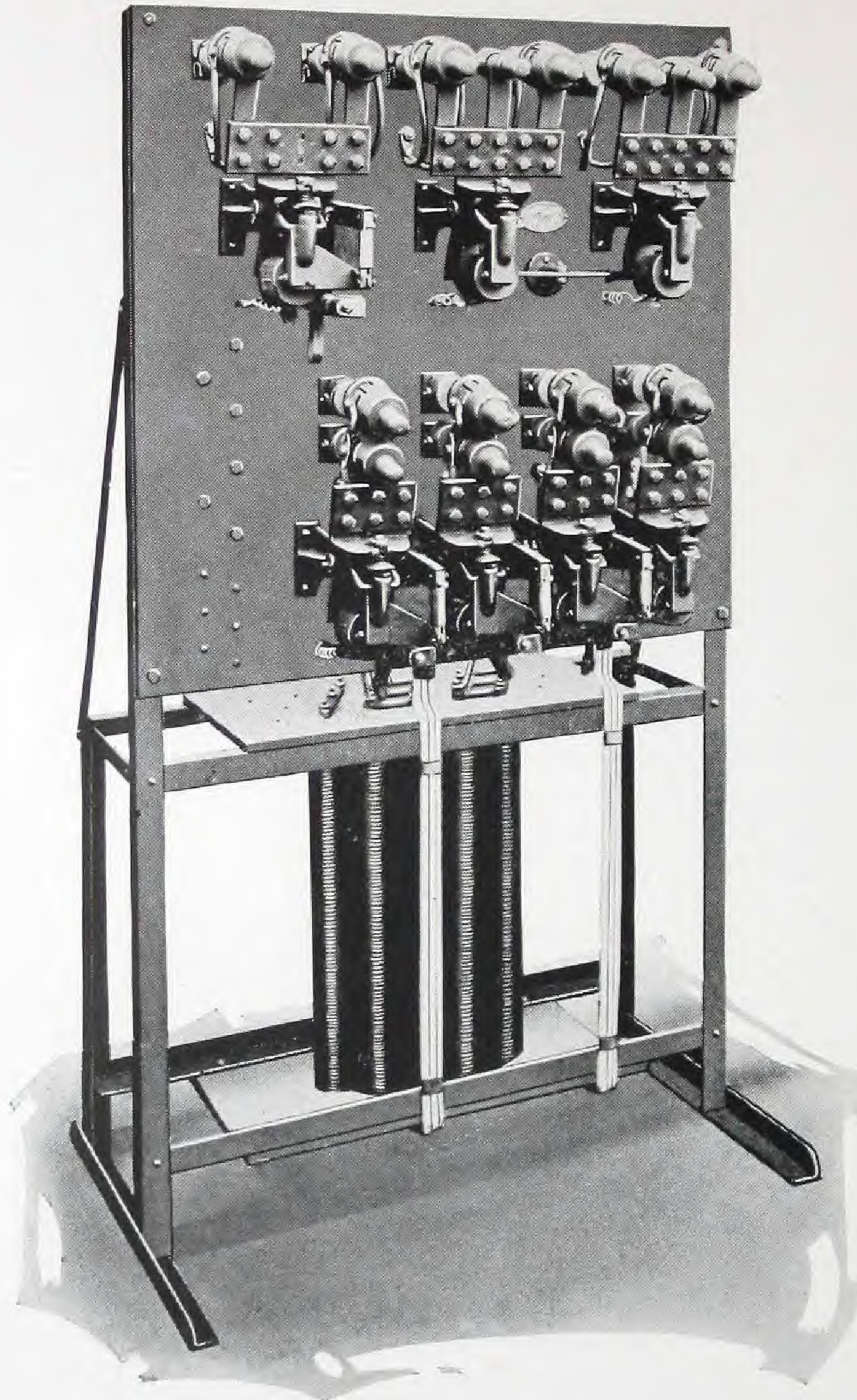
Where heavy dumb waiter service is required or the travel is long, we recommend a power machine, which operates quietly, especially the push-button type. They are great time savers and are always on the job.

The cable control type is operated by a cable running the full length of the hatch. The push-button type is operated and controlled by push buttons only. These machines are simple in construction and best for hospital, hotel, garage, factory and general use.



Controllers

Full Magnet Elevator Control Board for Single- or Two-Speed Alternating Current Motors

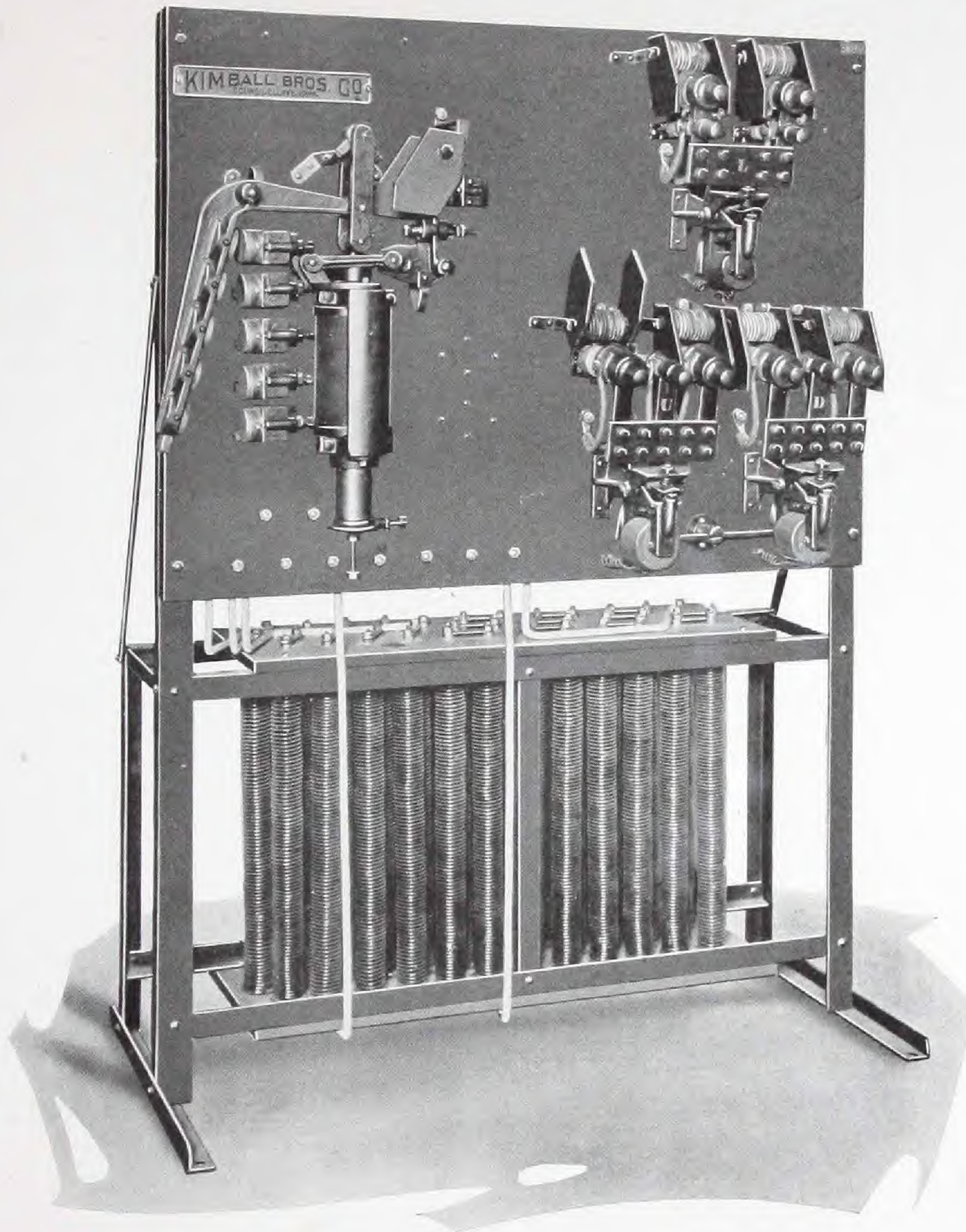


This controller consists of a double pole magnetic main contactor, two double pole reversing contactors and four double pole accelerating contactors for the type AC equipment, giving five steps of acceleration. The accelerating contactors are operated by a time limit accelerating relay. Enough accelerating steps are provided so that smooth starting is realized regardless of the load on the elevator car.

Equipped With Phase Failure, Phase Reversal and Low Voltage Protectors

Controllers

Full Magnet Elevator Control Board for Direct Current Motors



Direct current full magnet controller with slow-down.

For very smooth stopping of the elevator car we recommend that graduated slow-down and dynamic braking be used. This is obtained by means of a magnetic lockout contactor in the dynamic braking circuit in addition to the spring-closed dynamic braking contactor furnished on the standard equipment.

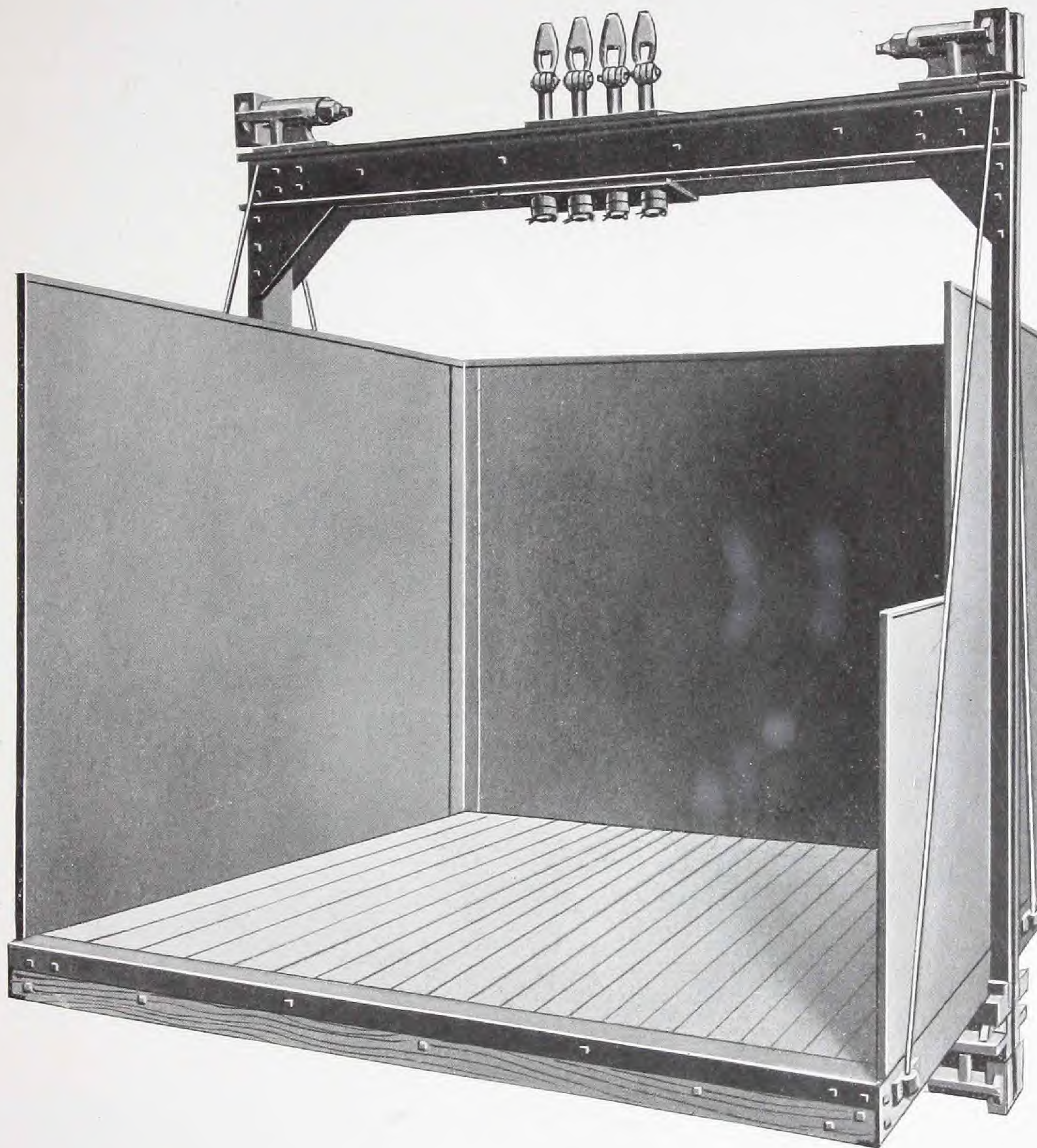
It Also Includes a Full-Field Contactor for Obtaining Stronger Dynamic Braking

Construction Details



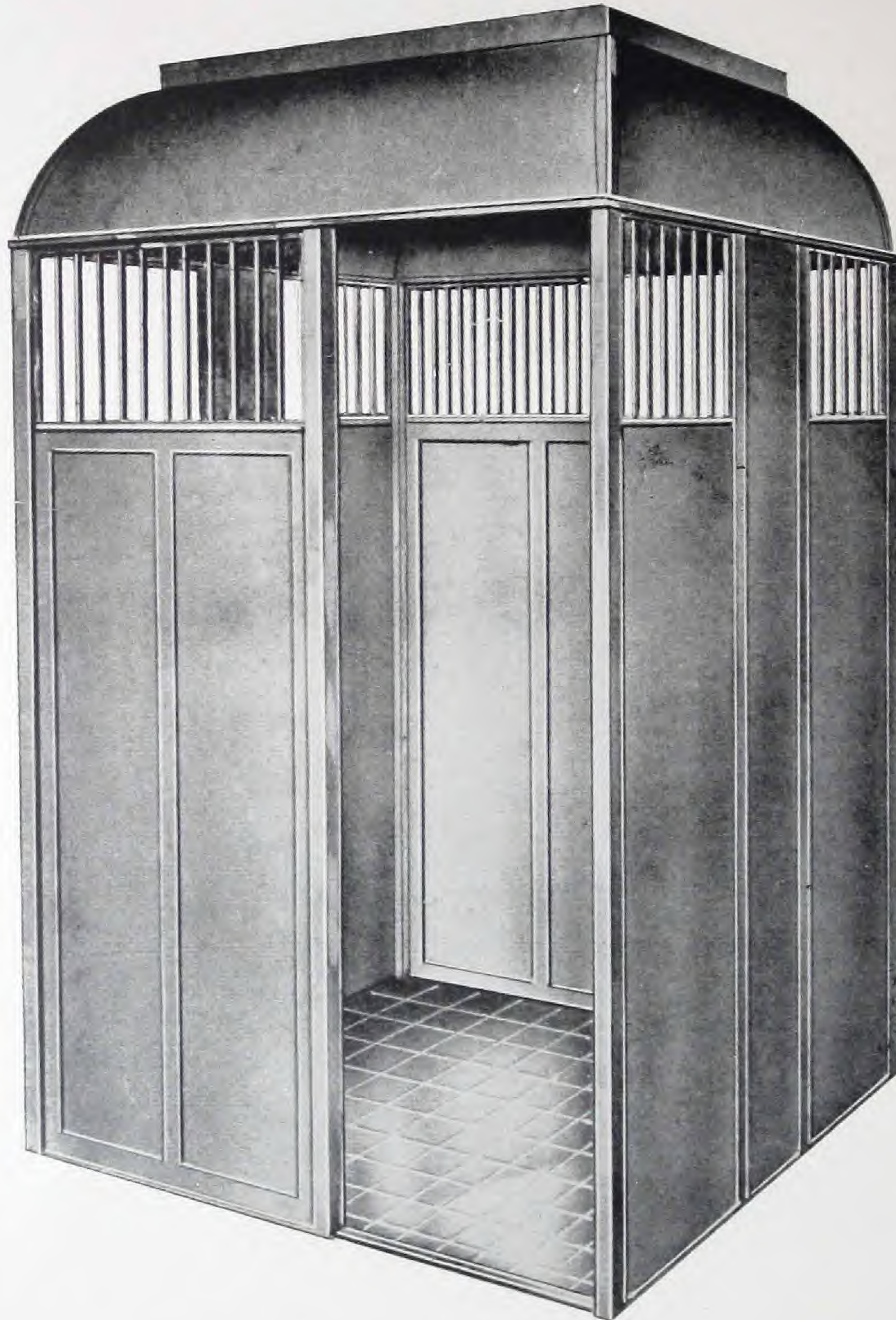
Kimball Passenger Car Safety Sling and Platform Construction

Construction Details



Construction of Kimball Freight Elevator Safety Sling and Platform

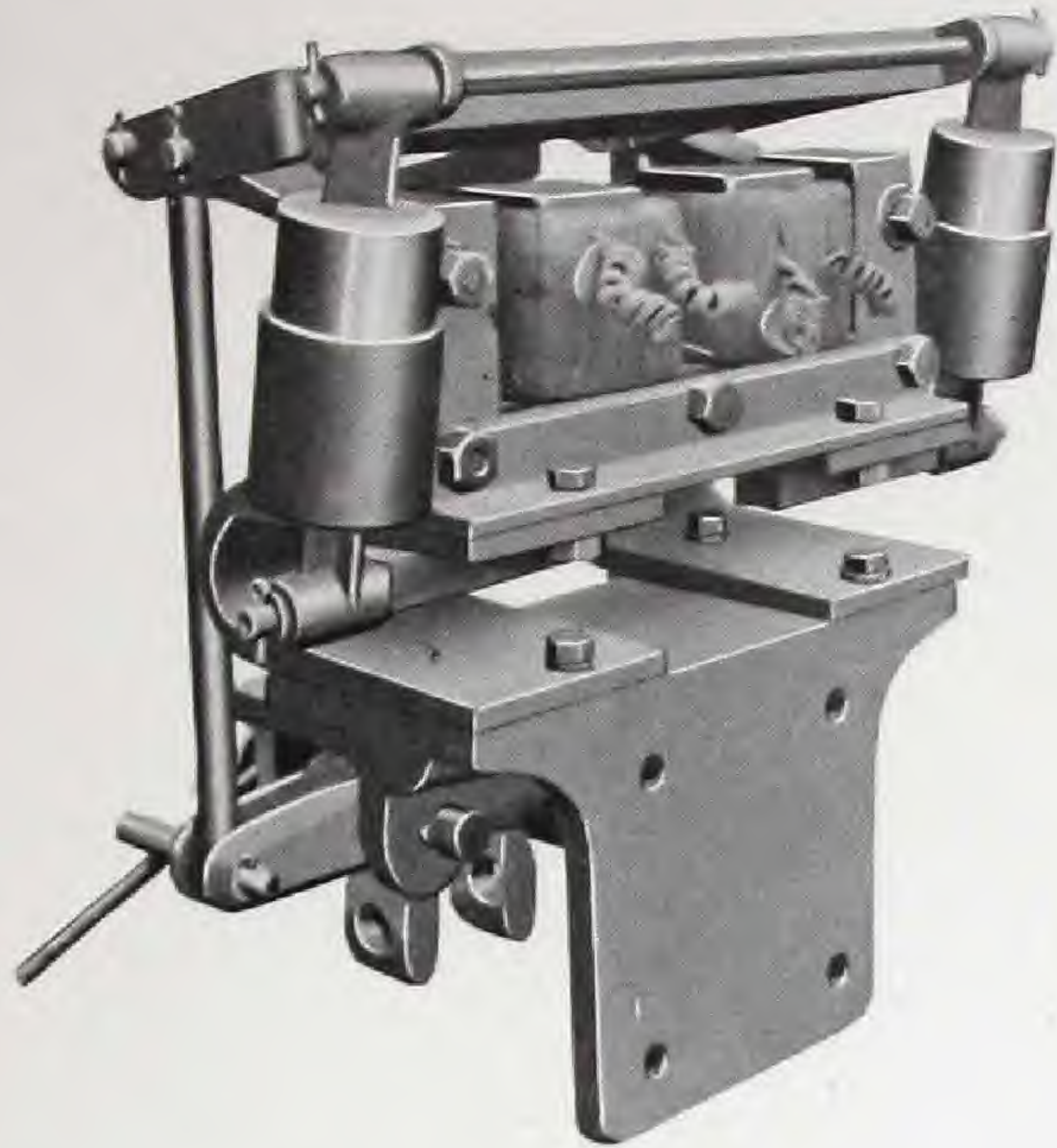
Cabs



A Cab Suggestion Design 410

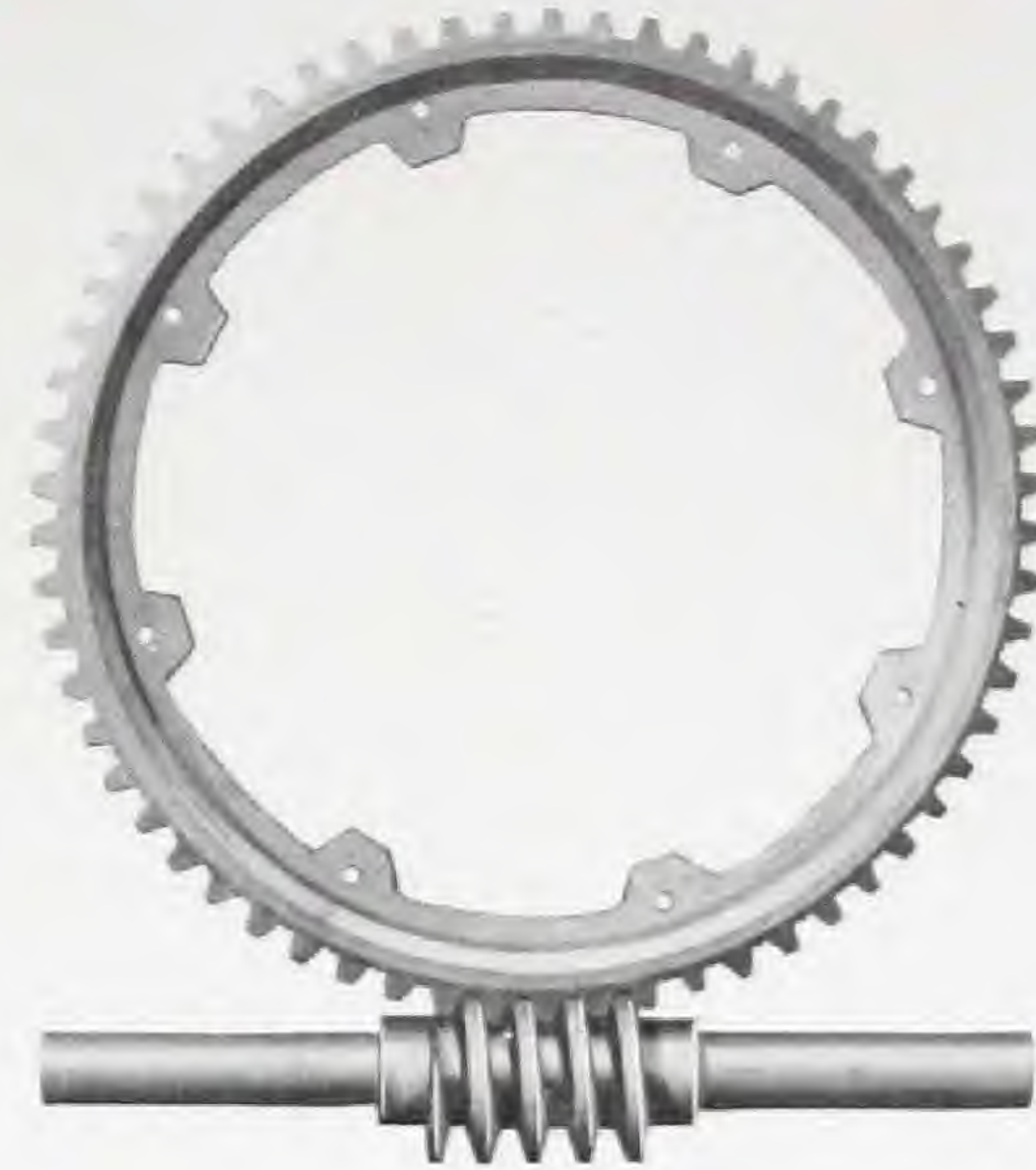
A popular elevator cab furnished in any color desired, painted or Baked Enamel finish—ask for cut of other designs.

Features



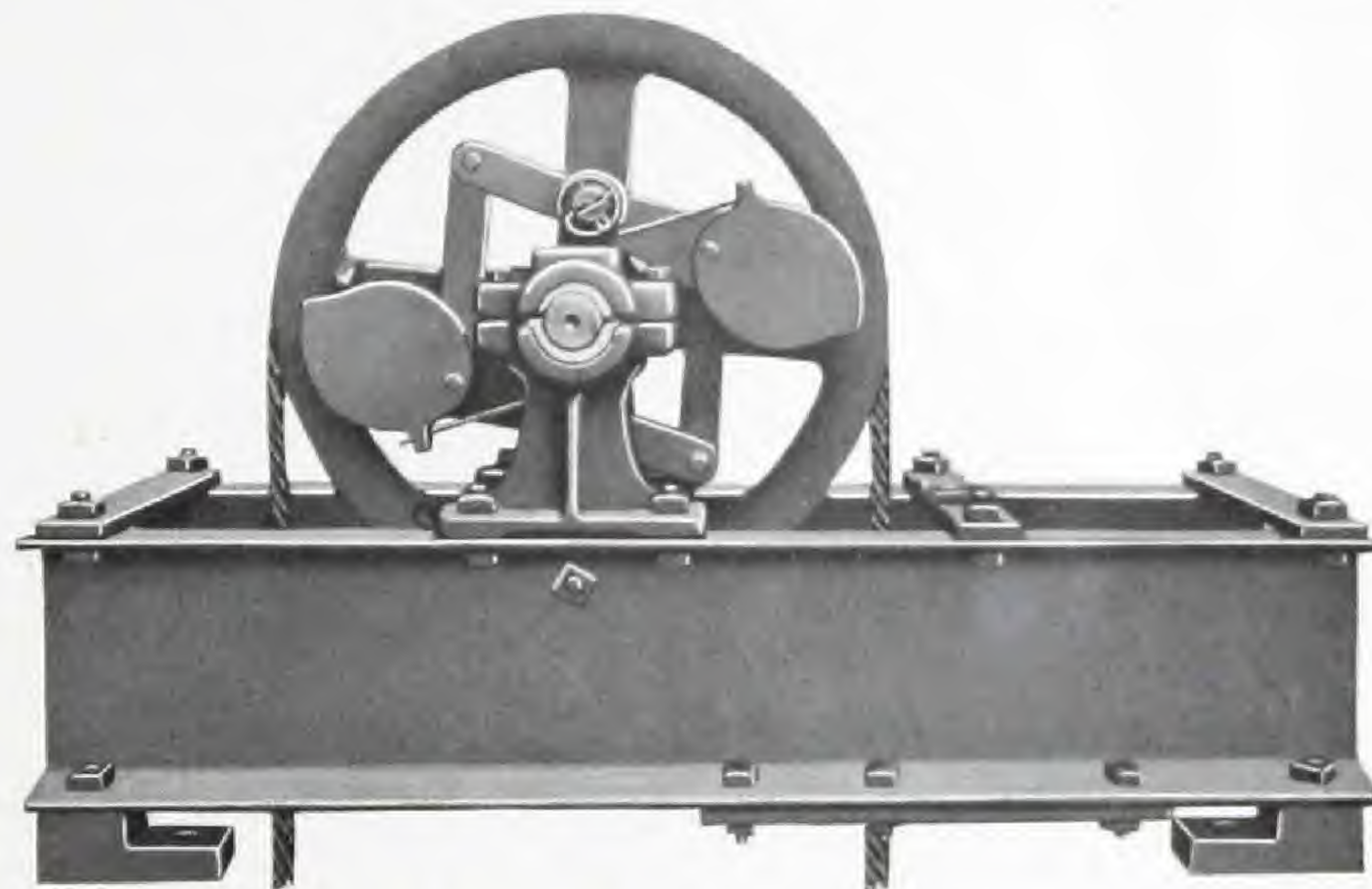
Magnet Brake

A multi-phase alternating current brake. Quiet in operation. Patented.



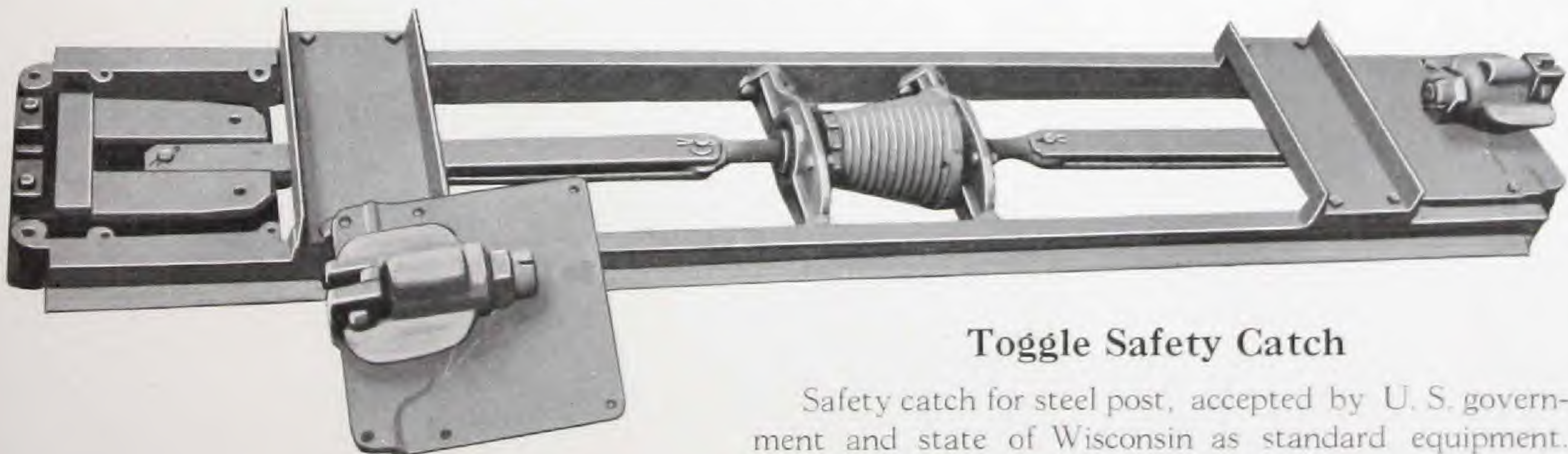
Worm and Gear

Gear cast from bronze, cut and hobbed on special machines. The worm is cut from solid steel by experts. The fit is perfect.



Speed Governor

Operates when car attains excessive speed. The tripping of the governor sets the safety catches.



Toggle Safety Catch

Safety catch for steel post, accepted by U. S. government and state of Wisconsin as standard equipment. Positive in operation. Absolutely safe.

Armour & Company's Packing Plant at South St. Paul, Minnesota

The Largest Packing Plant in the World—A Kimball Triumph



The above cut shows the immense packing plant of Armour & Co. at South St. Paul, Minnesota.

To date this plant has cost upward of sixteen millions of dollars, and as yet it is unfinished. Considered the model and most completely equipped packing plant in the world. Naturally the elevators—the most important equipment on which its successful operation depends—were selected with utmost care.

Every elevator in this mammoth plant is a KIMBALL ranging in capacity from a 500-pound electric dumb waiter to a huge 25,000-pound capacity cattle elevator. Every machine of the twenty-six furnished on this contract, with the exception of four, are of the Tandem Double Worm and Gear Type illustrated on Page 8.

This single contract amounted to many thousands of dollars and was one of the large contracts filled in the year 1920.

Above are listed the elevators furnished, showing the large field covered, including push button control, heavy freight, high speed passenger and freight. Every machine was built complete by us.

Repairs so far purchased on this installation have been very insignificant.

On this page we print a copy of the state inspector's report, a. k. d and approved by every officer in the plant, including the general manager and architect, giving our equipment the universal stamp of approval.

Elevators Installed

- 3 Cattle Elevators—25,000 lbs. 50 feet per minute.
- 1 Dumb Waiter—500 lbs. 100 feet per minute.
- 1 Freight Elevator—10,000 lbs. 40 feet per minute.
- 17 Freight Elevators—6,000 lbs. 150 feet per minute.
- 2 Freight Elevators—3,500 lbs. 150 feet per minute.
- 1 Freight Elevator—3,000 lbs. 75 feet per minute.
- 1 Passenger Elevator—3,000 lbs. 250 feet per minute.

Kimball Elevators Used in the Armour & Company's Plants

South St. Paul.....	26
South Omaha.....	3
Kansas City.....	7
Denver.....	5
Pueblo.....	1
St. Louis.....	2
Denison, Iowa.....	1
Chicago.....	1
Richland Center, Wis.....	1
Mankato, Minn.....	1
	48

JOHN F. HARRIS
ARCHITECT
CHAS. S. HARRIS
INC. ARCHITECTS

STATE OF MINNESOTA
DEPARTMENT OF LABOR AND INDUSTRIES
OLD CAPITAL
SAINT PAUL

(W W)
G.C.
MAR 27 1920

DEAN H. HULLICH
STATE ELEVATOR INSPECTOR
ARMOUR & COMPANY
SOUTH ST. PAUL, MINN.
JUNE 1920

March 25, 1920.
AGI
C.E.
7th Reg

Mr. E. G. Gillet,
Representing Kimball Bros. Co.,
Council Bluffs, Iowa.

Dear Sir:-

I have just completed my inspections of the elevators installed in the Armour Plant, South St. Paul, and find that the elevators installed there are among the best elevators that I have inspected, both as to the construction of the elevator, and especially the safety features of these cars.

They are in my estimation almost fool proof against accidents. I think the three fuses and the extra brake are a great improvement in the constructions of elevators. I made some tests of these elevators and found them to be absolutely safe in every respect.

Respectfully,

Approved and signed by following
Armour Co. officials:

Thomas O. Johnson

E. C. White.....Gen. Mgr.
R. C. Clark.....Chief Architect
C. Eikel.....Gen. Supt.
E. C. Harris.....Supt. M.F.
O. C. Utter.....Asst. " "
F. W. Marlow.....Master Mech.
F. E. Curtis.....Asst. M. Mech.
F. F. Bys.....Chief Elect.
A. C. Franklin.....Purch. Agt.

State Elevator Inspector